Facility Condition Assessment & Space Study Project

KRS 164 / M-05468008

Final Report

Submitted by:

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v1.1

Paulien & Associates

NCHEMS

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Kentucky Postsecondary Education System
Kentucky Community & Technical College System
Facility Condition Assessment & Space Study

February, 2007

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Note on Figure and Table Headings: Figures and Tables are numbered sequentially as if both illustrations were part of the same list. i.e. Figure 1.3 may be followed by Table 1.4, without there being a Table 1.3.

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Part II. B.

Kentucky Community & Technical College System

Versilles, Kentucky
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Section 1. Introduction

The Kentucky Council on Postsecondary Education (CPE) contracted with Vanderweil Facility Advisors, Inc. (VFA) to assess the condition, space adequacy and space capacity of selected facilities at Kentucky's nine public higher education institutions during the summer and fall of 2006. The studies are intended to inform both the Council and the institutions as the basis for a 15-year capital plan that would help address the following important questions:

- What is the condition of each institution's facilities? What system renewals are due for those facilities, both deferred renewals due today and future renewals due within the next 15 years?
- Is the current space (in selected buildings) fit for continued use? If not, how much would it cost to upgrade those buildings?
- Does each institution have enough space, now and to meet enrollment projections for the year 2020? If not, how much will it cost to add the needed space?
- How do Kentucky facilities compare to other postsecondary educational portfolios?
- Is there evidence to indicate why the predicted capital reinvestment is needed?
- What recommendations does the project team have as KPES creates a 15 year capital plan for facilities?

Summary of Findings Figures:

Figure 1.1: KCTCS 15-Year System Renewal Needs

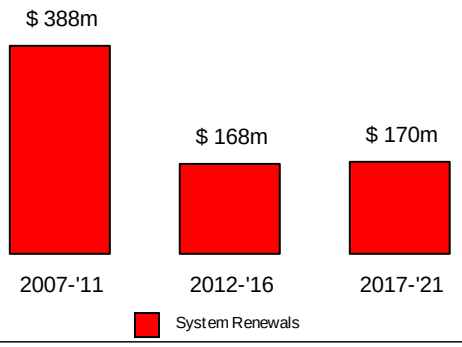


Figure 1.2: KCTCS 15-Year Space Adequacy + Capacity Needs

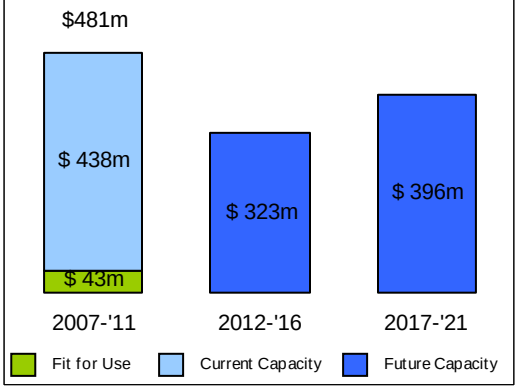
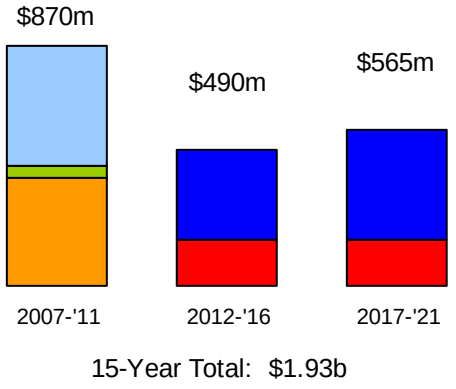


Figure 1.3: KCTCS 15-Year Blended Needs



LEGEND: Colors in Figure 1.3 correspond to labels in Figures 1.1 & 1.2. Figure 1.3 summarizes the annual needs presented in Figure 6.4.

Attributions:
All sections of this report are by Peter Scanlon, Thomas Bart and Joseph Maggiore of VFA, Inc., unless otherwise noted under the Section heading.

Table 1.4: Percentage of Institutional Portfolios Included in Study

	Institutions' Portfolios*		Condition Assessment by VFA**				Space Adequacy Study by Paulien			
Institution	Total # of Buildings	Gross Square Ft	Total # of Buildings		Gross Square Ft		Total # of Buildings		Gross Square Ft	
Eastern Kentucky University	190	4,626,458	55	(29%)	2,829,774	(61%)	10	(5%)	867,593	(19%)
KCTCS	284	6,138,142	198	(70%)	5,740,720	(94%)	8	(3%)	509,813	(8%)
Kentucky State University	54	1,223,473	37	(69%)	726,963	(59%)	7	(13%)	148,841	(12%)
Morehead State University	112	2,718,050	39	(35%)	1,556,012	(57%)	11	(10%)	813,450	(30%)
Murray State University	169	3,710,171	48	(28%)	2,453,372	(66%)	3	(2%)	203,667	(5%)
Northern Kentucky University	109	2,440,541	26	(24%)	1,558,254	(64%)	5	(5%)	649,987	(27%)
University of Kentucky	908	14,884,891	167	(18%)	8,700,858	(58%)	51	(6%)	3,564,946	(24%)
University of Louisville	136	7,889,007	107	(79%)	4,513,765	(57%)	36	(26%)	2,469,961	(31%)
Western Kentucky University **	54	4,266,565	40	(74%)	1,860,621	(44%)	10	(19%)	809,809	(19%)
Total	2,016	47,897,298	717	(36%)	29,940,339	(63%)	141	(7%)	10,038,067	(21%)

*Source: Fall 2005 Building Data Base submission.
**Space assessed by VFA is Education and General Space.
***Revised to include WKU housing facilities.

Summary of Findings:

- The present study examined only a portion of Kentucky Community & Technical College System's (KCTCS) portfolio 198 of 284 buildings (70%) for condition study and 8 of 284 buildings (3%) for space study). The results of the present study most likely understate the amount of capital investment needed.
- KCTCS facilities included in the study require $388 million in system renewals during 2007-2011, and $377 million more between 2012 and 2022, totaling $725 million in system renewals over 15 years. (Figure 1.1 and Section 4.)
- KCTCS facilities included in the space fit-for-continued use study require $43 million between 2007 and 2011 to bring them up to current educational adequacy standards. (Figure 1.2 and Section 5.)
- KCTCS facilities require $438 million between 2007 and 2011, to meet current enrollment needs, and an additional $718 million over the following 10 years to meet future enrollment projections. (Figure 1.2 and Section 5.)
- For facilities included in the study, the total 15-year capital investment required to address condition, adequacy and capacity is $1.93 billion. (Figure 1.3 and Section 6.)
- Kentucky Community & Technical College System compares unfavorably (30% 5-year Facility Condition Index) to the benchmark higher education institution's portfolio (18% 5-year FCI). (Section 4.)
- The condition of facilities KCTCS is generally consistent with the age and construction methods of the facilities. There are many major system renewals due because 65% of KCTCS buildings were built over 20 years ago, and as would be expected, many systems are at the end (or beyond the end) of their expected useful life. (Section 4.)
- The project team recommends CPE and KCTCS address all three needs (condition, adequacy and capacity) with blended investments to address them simultaneously, staged over 15 years. (Section 6.)
- Funding options for KCTCS to consider vary according to the type of facility: The "cleanest" approach to funding the backlog of deferred renewals would be a state bond issue paid from general operating revenues, together with a requirement that each institution spend an amount equal to the GASB recommended depreciation amount. New construction of auxiliary facilities is most often funded with long term debt supported by student direct use charges. The predominant funders of general academic facilities—classrooms, labs, offices, and libraries—are state and local governments (direct appropriations or debt) and private donors (outright gifts). The primary funders of research facilities are state and federal governments and private donors (either individuals or philanthropic organizations). (Table 1.5 below, and Section 7.)

Table 1.5 below (a copy of Table 7.3 in Section 7) is presented as a worksheet for KPES.

Here, the subtotals of the "Strategic Funding" scenario suggested in Section 6.8 are shown in the "Amount Needed, from 2006 Study" column. (The total amount needed, $1.797b, is less than the $1.93b shown in Figure 1.3 because the recommended "strategic funding" leaves a small, usually acceptable (10%), portion of the deferred renewals undone.)

KPES and KCTCS policy makers can use Table 1.5 as a framework to allocate the Amounts Needed across the most likely sources of funds to create KPES' 15 Year Funding Plan.

If KPES and KCTCS choose to supplement this study with additional information, any additional capital investments identified would need to be included.

TABLE 1.5
KCTCS Funding Patterns Worksheet for Higher Education Facilities

USES		SOURCES					
	Amount Needed, from 2006 Study	Students	State	Local Govt.	Federal Govt.	Donors	Institutional Funds
Renewal and Renovation							
• Condition/End of Life	$598m		Approp./debt				Approp./debt
• Space Adequacy	$43m		Approp./debt				Approp./debt
New Construction							
• Auxiliary	n/a						
2006 Capacity							
• Academic facilities	$438m	Fees	Approp./debt	Debt		Gifts	Lease/ purchase
• Research facilities	$0m		Approp./debt		Grants	Gifts	
2020 Capacity							
• Academic facilities	$718m	Fees	Approp./debt	Debt		Gifts	Lease/ purchase
• Research facilities	$0m		Approp./debt		Grants	Gifts	
TOTAL	$1,797m						

Figure 1.5 is a copy of Figure 7.3 in Section 7.

Section 2. Project Overview: Methodologies, Data, Outcome & Limitations

The nine institutions included in the study were:

- Eastern Kentucky University
- Kentucky Community & Technical College System
- Kentucky State University
- Morehead State University
- Murray State University
- Northern Kentucky University
- University of Kentucky
- University of Louisville
- Western Kentucky University

The study includes selected buildings identified by CPE as education and general space on each institution's campus. In total, VFA performed a Level 1 Lifecycle Condition Assessment (LCA) of 198 assets at KCTCS comprising 5.7 million square feet (70% of 284 buildings; 94% of square footage in portfolio). Approximately 400 thousand square feet (6%) of institutional space was not included in the condition study. Also, VFA's project partner Paulien & Associates was asked to examine the space adequacy of 8 education and general buildings selected from three campuses (only 3% of 284 buildings in the portfolio), and evaluate the space capacity of each institution vs. current and future student populations.

The number of buildings and amount of space not included in the present study means the results of the study most likely understate the amount of capital investment needed at KCTCS.

Methodologies

In the Level 1 Lifecycle Condition Assessments, VFA facility experts profiled each asset's major building systems to assess the capital renewals required now and in the future. A renewal of a building system is defined as an investment required at the end of the system's useful life, to prolong, or renew, its service in the facility — for example, re-roofing a worn out old roof.

"Deferred Renewals" are renewals that, based on the age of the facility, were due in the past, but have not yet been completed.

Each building's system lifecycle assessment included establishing a replacement value of each system, comparing the system's expected (industry standard) useful lifespan to its observed remaining life, and estimating the cost to renew that system when replacement is due. Replacement values (adjusted to reflect local market conditions) of each asset's component systems were then added together to establish an asset's replacement value, and the cost of system renewals due within the coming five years was summed. The ratio of these 5-year renewal costs divided by the replacement value of their asset(s) establishes an index, called a Facility Condition Index, which can be used to compare the relative condition of assets. Lower FCIs indicate an asset requires little renewal investment; buildings with higher FCIs are in worse shape. Lower FCIs are better.

$$FCI = \frac{[\text{Sum of 5-year Renewals}]}{[\text{Replacement Value of Asset(s)}]}$$

The LCA process and methodology is supported by the expert opinions of facilities engineers and architects, along with VFA's web-based capital planning software application, VFA.facility. Condition data about each facility were collected during an on-site visual inspection and through a series of interviews and feedback cycles with facility managers at the institution. Detailed cost estimates for the replacement value and renewal cost of each system were developed using the VFA.facility software application, which has the widely accepted R.S. Means construction cost estimating database embedded within it. R.S. Means estimates, already localized by a city cost index by Means, were further adjusted (up) to match the historical project cost experiences represented by a cross section of Kentucky public postsecondary institutions. For consistency between campuses, the same adjustment factors were made across all institutions. Expected useful lifespans for individual building systems were based on Building Owners & Managers Association (BOMA) standards and verified though consultation with CPE and APPA (formerly the Association of Physical Plant Administrators). A detailed account of these sources and adjustment factors is presented in Appendix A2.

Selected buildings that were less than five years old were assumed in "good" condition (because of their young age). Their future system renewal needs were included in the condition study by modeling system types and renewals based on construction records and interviews with university facility managers. This produced data compatible with the Level 1 (and Level 2) assessments. No physical walk through or visual inspection was conducted on these buildings. (As expected, due to their young age, many 5-year-old-or-less buildings had no renewals due within the coming five years, and hence an FCI = 0.)

Each asset greater than five years old was assumed to have a backlog of systems that were at or beyond their expected useful life. In determining the backlog, all capital renewals due in 2006 or previous years were defined as "deferred capital renewals." Renewals due in 2007 or beyond were treated as future capital renewals.

It is worth noting that the Level 1 Lifecycle Condition Assessment process does not include identifying "deferred maintenance" deficiencies. These facility needs, while often rising to the level of requiring capital investment to address, would each require less than replacing each deficiency's entire system. (Replacements of entire systems are called renewals, and are included in Level 1 LCAs.) Identifying and estimating the cost of deferred maintenance requirements is a service available through VFA's Level 2 Detailed Facility Condition Assessments.

In the Space Adequacy or Fit-for-Continued-Use portion of the study, buildings selected by CPE and the institution were visually inspected for compliance with 9 metrics of the facility's educational adequacy. Where gaps were identified, recommended corrective actions were developed, including cost estimates for those actions. Cost estimates were based on historical averages for similar upgrades at higher education institutions nationwide, and adjusted to coincide with the replacement values for similar building types estimated in the VFA condition study.

The Space Capacity portion of the study addresses the need for additional educational and general (E&G) space to meet the needs of the student and staff population, both now and into the future, based on enrollment data and projections provided by CPE.

Detailed methodologies explaining both the condition assessment and the space study are presented in Appendices A2 (Condition) and A4 (Space).

Data

Detailed records of each building in the study are presented in the appendices:

Appendix A3. Facility Condition Data Reports
- Asset List Report
- Asset Detail Report(s)
- System Renewal Report, by Year
- System Renewal Crosstab Report

Appendix A5. Space Study Data Reports
- Building Space Fit-for-Continued-Use Profiles
- Space Capacity Detailed Report

Complete electronic records of each asset are available for licensed users of VFA.facility, VFA's capital planning and management software system. VFA.facility software offers the flexibility to investigate, analyze and model the capital needs for each institution, and for the Kentucky postsecondary education system as a whole.

Outcomes

KPES' and KCTCS' goal is to gain a complete picture of Kentucky's public higher education facility capital needs over the coming 15 years.

To that end, this study presents some valuable pieces of that picture, though not yet a complete picture:

Condition:	Major system renewal needs for 40 assets, or 1.8 million square feet of space (44% of portfolio square footage)
Space Adequacy:	"Fit-for-continued-use" ratings, and cost estimates for upgrades, for 10 buildings (19% of portfolio buildings).
Space Capacity:	Capacity projections and cost estimates for KCTCS' education and general use

space needs, now and to meet 2020 enrollment goals.

Funding Source Options: A summary of options for funding higher education capital needs, presented at a statewide level. Funding options are most efficiently approached across Kentucky's postsecondary education portfolio, and are not broken down by institution within this report.

Section 6 of this report presents the 15 year capital needs outlook for each portion of the study. The 15-year plan also presents models for how KCTCS might want to invest in those needs, based on various spending patterns and strategic priorities. The spend alternatives are included to demonstrate how a truly complete picture of Kentucky's public higher education capital plan might be constructed.

However, as mentioned in the Limitations section below, the outcome of the present study does not present a 100% complete picture of the whole. Each portion of the study is valuable on its own, but the condition, space adequacy and space capacity needs portions each examined only a specific group of each institution's facilities. Further, the Space Capacity projections, while updated from the Paulien 1999 model (revised by Paulien in 2001), may not be aligned with other strategic initiatives underway or planned at individual institutions.

Section 6 includes the consultants' team suggestions for further work to align goals and construct a more complete picture of Kentucky's public higher education facility capital needs.

In the condition assessment portion of the study, VFA found the amount of system renewals required by the great majority of KCTCS' facilities to be consistent with the age and use of each facility, and many buildings to be surviving (for the time being) past their expected useful lifespans. And while there are examples of major capital investment in new facilities, the amount of investment in the existing building stock has not met these buildings' aging needs.

Limitations

It is important to note a few limitations to the VFA | Paulien portions of the study:

- **Assessed only selected buildings** – 198 of KCTCS' facilities (70% of the number of buildings), comprising 5.7 million gross square feet (94% of gross square footage), were included in the condition assessment. Further study or modeling of the remaining assets would be required to gain a 100% complete picture of the condition or capital needs of the institutions.
- **Assessed for budgeting purposes –** The survey outcomes are intended for planning and budgeting purposes; they are not intended to provide construction specification-grade information about an asset. Outcomes for condition needs, space adequacy needs and space capacity needs may be added together to ascertain a more rounded picture of an institution's needs (in fact, the project team encourages such a blended view of capital investments for each asset/campus), however because such a limited portion of most institutions' portfolio was studied, the "blended" picture is far from complete.
- **Assessed for system renewals only** – The Level 1 LCA services provided under this contract included profiling the type, condition and renewal needs of each building and its major systems. The condition assessment does NOT provide a detailed list of requirements for each building. (This service is available through VFA's Level 2 Detailed Facility Condition Assessment.) Thus, while projecting system renewals over 15 years, the forecast does not account for sub-component needs related to a system unless they collectively contribute to general system failure. These are sometimes called "deficiencies" or "requirements," are usually concentrated in the next 1-5 years, and again, are not included in this report.

  Also not included in the study is any assessment of the day-to-day facilities operations. The study specifically and intentionally focused on the level of investment needed for major system renewals only. The study collected no data and draws no conclusions about how institutions are

budgeting to address daily operations and maintenance of their facilities.

- **Space Study only for selected Education and General buildings –** The Space Study included 8 buildings on three KCTCS campuses. This represents only 3% of the total number of buildings (and 8% of gross square footage). The space adequacy study is intended to summarize the adequacy of the study buildings only. KCTCS selected the buildings as representative of the types of campuses and buildings that are found throughout the system, however since the buildings surveyed would not represent a statistically valid sample of the overall KCTCS space adequacy, extrapolation of the space adequacy results to model all adequacy needs for each institution is not recommended.
- **Space capacity projections include Education & General Space only** – The Space Capacity Study accounted for the education and general space at each institution, the institution's current enrollment, and the 2020 enrollment projections. Needs for residential and related enterprise space such as agriculture were not included. As noted, further survey or advisory services are available from the VFA | Paulien team to help fill in any gaps in the information that are deemed of high importance.

Section 3: Study Overview: Project Organization & Implementation

Organization

In April, 2006, the Council on Postsecondary Education contracted with VFA, Inc. of Boston, MA, as prime contractor, to conduct the overall facility condition and space adequacy | needs study. VFA provided overall project management as well as facility condition assessment services and capital planning software for the project. VFA teamed with higher education space planning experts Paulien & Associates of Denver, CO, to provide the Space Adequacy / Fit-for-Continued-Use and Space Capacity portions of the study. And, as a subcontractor to Paulien, the National Center for Higher Education Management Systems, of Boulder, CO, provided an analysis of funding sources KPES may want to consider when deciding how to implement the 15 year capital plans.

A project organization chart is shown in Figure 3.1

Figure 3.1 Project Organizational Chart

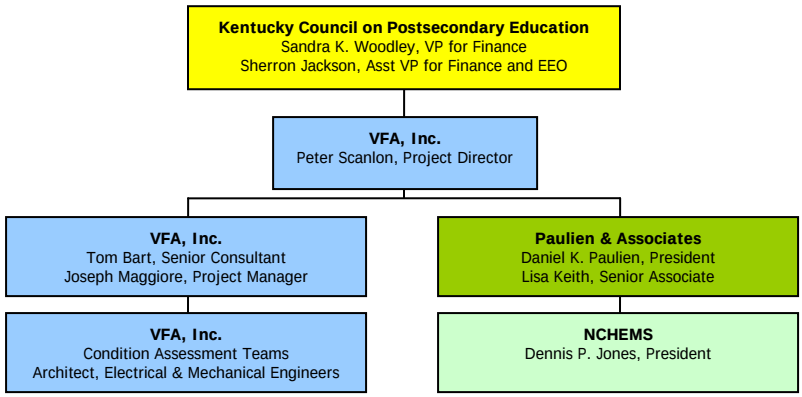
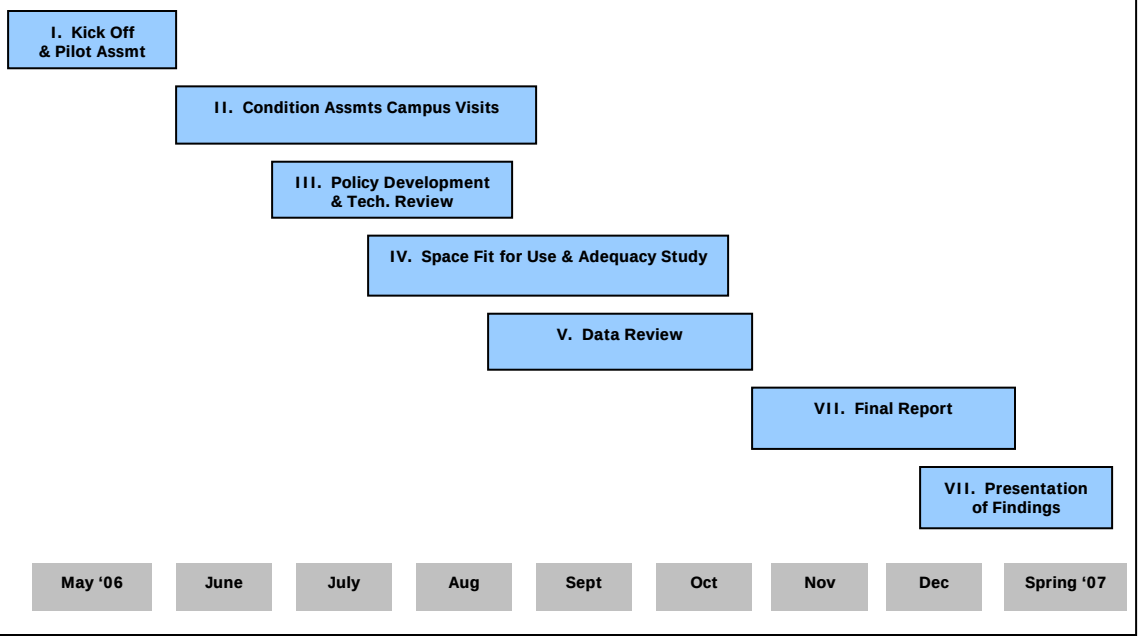


Figure 3.2: Project Schedule



Implementation

The study proceeded under a fast track schedule during which 27 million square feet, and 700+ assets, were assessed statewide during five months of 2006. Figure 3.2 illustrates the major portions of the project schedule.

Phase I: Kick Off & Pilot Assessment

The project kicked off in early May 2006 at a planning meeting hosted by Kentucky State University and attended by representatives of the Council, each of the public postsecondary education institutions, and the VFA | Paulien project team. The overall project schedule and methodology were presented, and a pilot assessment was conducted.

For the pilot assessment, a team of VFA assessors conducted a Level 1 Life Cycle Assessment of 2 facilities on the KSU campus. Representatives from each institution joined the VFA team to familiarize themselves with the Level 1 LCA process. During a debriefing session at the conclusion of the visual inspections, questions about the process, standards and schedule were answered.

In the weeks following the kick-off meeting, VFA developed sample data and reports based on the KSU pilot buildings. The reports were submitted to the Council and institutional representatives, who approved the data content and format that would be used for the subsequent Level 1 LCAs on their respective campuses.

Phase II: Campus Visits

During the summer and fall of 2006, assessment teams from VFA and Paulien visited selected buildings at each institution.

Data generated in the Facility Condition Assessment portion of the study was collected by teams of VFA assessors – typically architects, electrical and mechanical engineers and/or facility managers – during a visual inspection of each asset. The detailed project assessment schedule is included in Appendix A1.

During the visual inspection, VFA assessors interviewed key facility managers at the institution, profiled the type, age, condition and renewal actions due for each major system of each building/infrastructure asset. Assessors also took digital photos, which are included in the reports and stored in the project database.

Upon completion of the field visit, the assessment teams began the data and cost estimating portion of the work, when they developed detailed cost estimates of each building system, the time remaining in each system's useful life, and the likely cost of renewing the system at the end of its useful life.

The replacement values of each system were totaled for each asset to derive a current replacement value (CRV) for that asset. CRVs presented in the data are intended to represent the construction cost of replacing the building (or system), with a similarly functioning building/system, in 2007 dollars. The CRVs do not include any "upgrades" of particular systems unless current building methods make the upgrade equal or less expensive.

Phase III: Policy Development and Technical Review

The project team worked closely with the Council to develop policies that would guide the submission, review and possible adjustment of the data. Guiding principles that shaped these policies included goals of:

- Accuracy: data should reflect actual conditions for each facility, as closely as possible given methodologies used for each portion of the study, providing a reliable record of the portfolio today.
- Consistency: similar standards, reference information and adjustment factors should apply uniformly to all institutions statewide, ensuring fair and equitable treatment across the postsecondary system.
- Transparency: all data sources, cost estimating and adjustment processes should be easy to reference, understand and track, providing maximum transparency to the information underlying the study's conclusions.

The process of reviewing and refining the data (Phase V, below) followed these principles as closely as possible.

Phase IV: Evaluation of Space Adequacy & Capacity

The Space Adequacy and Capacity portion of the study was led by Paulien & Associates. A detailed explanation of Paulien's methodology is included as Appendix A4.

Space Adequacy | Fit-for-Continued-Use Study

CPE and the institutions identified a specific set of education and general facilities for evaluation in the space adequacy study. The facility selection process was developed by CPE and was the same for each campus. Selection criteria for inclusion in the space adequacy study included: (a) research facilities, (b) constructed before 1965, (c) identified by the institution as being unfit for continued use, or (d) identified as being in too deteriorated condition to support programs currently housed in the space.

The key areas evaluated include:

- *Does the building serve the program's current and future needs either by design or retrofit?*
- *How do the spaces in the building fit today's expectations and/or can the building be reasonably renovated to meet those expectations?*
- *Is the building's physical condition adequate to meet program needs and today's expectations (including life safety issues) and how major of a conversion or renovation is needed?*
- *Where applicable, are research laboratories of acceptable, flexible dimensions and up-to-date equipment to sustain on-going use as modern research facilities?*

Multiple rooms in each building were reviewed. The goal was to examine a sampling of the best, worst, and norm for the building. Classrooms, laboratories, offices, special use spaces, and bathrooms are examples of spaces reviewed. Mechanical and structural spaces were typically not included.

At the end of each day's assessments, the team discussed each building and collectively determined each building's criteria rating and recommended action.

Building Design

When evaluating the buildings in the space adequacy study, there were several conditions examined on a case-by-case basis. These conditions contributed to the recommended action

for each building. Where possible these types of issues are included in the comment section of each building's evaluation. In general, it is important for a facility to promote and serve the activities and programs it houses as well as support the mission and overall master plan of the institution. It is entirely possible that a building was designed for and adequately serves the programs it houses yet be physically located in the wrong precinct of a campus or be a smaller single story building in a prime location that would be better served by a larger, multi-story building.

Some of the buildings were specifically designed for the programs contained in them or for the functions they serve, yet the building may now be overcrowded due to the institution's/ program's growth or the physical design is antiquated for today's standards or the construction materials do not allow for an cost-effective or efficient renovation. Certain buildings are on the historical registry. Many of these older facilities are best suited for administrative offices and not instructional programs. If the building does not meet ADA requirements then the additional constraint is that the administrative function should not be one that is high profile which generates a lot of people traffic.

Space Adequacy Assessment

The consultants reviewed nine criteria and rated each building on a one to four scale as follows: 1 = Unsatisfactory; 2 = Somewhat Unsatisfactory; 3 = Somewhat Satisfactory; 4 = Very Satisfactory; 0 = Not Applicable. An average rating was calculated based upon the criteria that were applicable to the building. The nine criteria are:

1. *Room Capacities*
2. *Functionality*
3. *Suitability to Purpose*
4. *Flexibility of Space for Different Learning Styles*
5. *Gathering Space*
6. *Multi-Media Technology*
7. *Computers and Connectivity*
8. *Instructional Laboratories / Lab Equipment*
9. *Research Laboratories / Lab Equipment*

Physical Condition

Each building's physical condition was reviewed in general terms. Areas of observation included, but were not limited to: ADA accessibility, roof leakage, asbestos related materials, air quality/condition issues, electrical and lighting issues, window glazing, elevator presence and condition, type of construction, and general maintenance of the building.

Buildings were then categorized into four major groups to more easily quantify the estimated renovation costs for the adequacy study.

The four categories used ($25/sf, $50/sf, $75/sf, $150/sf) provide budgetary guidance which should fall within a plus or minus 20% range of actual costs. The dollar value selected (as part of the space study estimates) includes all costs, both soft and hard. Categories carrying $25/sf and $50/sf renovation costs were termed "minor" --- indicating they could likely be occupied during renovation (mostly finishes, slight reconfigurations). Categories carrying $75/sf and $150/sf were termed "major" renovations – indicating the need to move all occupants out during renovation. Also, when we refer to a renovation as "major" we are attaching a sense of urgency to the need.

How were the four cost ranges determined and what documentation from the construction industry was used? Until recently, all construction estimates and contracts were guided by the Construction Specifications Institute Format (CSI) and the 16 divisions therein:

Division 1 General Conditions
Division 2 Site Work
Division 3 Concrete
Division 4 Masonry
Division 5 Metals
Division 6 Wood & Plastics
Division 7 Thermal & Moisture Protection
Division 8 Doors & Windows
Division 9 Finishes
Division 10 Specialties
Division 11 Equipment
Division 12 Furnishings
Division 13 Special Construction
Division 14 Conveying Systems
Division 15 Mechanical
Division 16 Electrical

The CSI format has been in use for 75 years or so, and is well suited for use in estimating the renovation costs. CSI has revised the format recently, but this traditional version was used. Each of the Divisions above has several subheadings--- for example, Division 9 - Finishes

has 14 subheadings among which are Painting, Tile, Carpet, Acoustical Treatment, etc. Division 15 - Mechanical has 12 subheadings among which are Plumbing, Fire Protection, Air Distribution, etc. Therefore, ALL pieces of a building are given in the CSI format. In a simple but lengthy process, an experienced construction estimator could assign square foot values to all the nearly 200 subheadings and have the information necessary for a reasonably accurate renovation cost. Paulien's construction consultant, Wayne Elwell, used his experience to provide values for most of the subheadings necessary for budgetary purposes. These incremental pieces, for example, $15/sf for a new HVAC system, $12/sf for an updated electrical system, $4/sf for new paint, etc., all contribute to the number that fits one of the four categories.

Space Needs Study

The Finance Unit from CPE provided a Fall 2004 facilities inventory, staff full time equivalents, and research expenditure data for each of the institutions. The Council also provided enrollment, staffing and research expenditure projections for year 2020.

The Space Model used in the current study was based on the 1999 Space Needs Model developed for CPE by Paulien & Associates, updated by Paulien in 2001, and again updated during this study per the consultant's recommendations to reflect changing use standards and the physical limitations of certain Kentucky buildings.

The existing assignable square footage (ASF) used in the model reflects educational and general (E&G) state supported space only. It does not include hospital space, farms, and locations (remote locations and service centers) off the main campus. This is important as the student and staff full-time equivalents (FTE) include all students and staff for an institution. The Kentucky postsecondary education system provided a dataset of the spaces to be included in the model. It was the consultants' understanding that the non E&G spaces were removed. As the study progressed, the consultants found parking garages, leased space, farm space, and other spaces that typically should have been excluded in the model were actually included at individual institutions. Where possible, the consultants excluded these spaces. Council staff was informed of these anomalies, and agreed that these adjustments should be made. In future applications of the space model, the consultants encourage the Council and the institutions to review the spaces carefully so that each institution is being measured appropriately against the model.

Phase V: Institutional Review of Data

As campus visits were ending during the summer of 2006, ten representatives of the Council and institutions were trained on the capital planning software, VFA.facility. These facility managers and planners then reviewed draft condition data developed by VFA. Current Replacement Values for each asset and system definitions and scopes were reviewed by representatives of each institution. Where gaps in cost or scope were identified by the institutions, and supported by historical or industry standard data, VFA adjusted the data. A list of adjustments is included as Appendix A6.

Some cost adjustments were statewide and necessitated comparison of Kentucky data to national norms, as defined by APPA, or a compilation of historical data from Kentucky institutions. In these cases, VFA carefully compared the scope and costs, and where necessary, considered specific adjustments. The Council had final approval on which adjustment factors would be applied statewide, and which could be applied specifically to each institution's data.

Phase VI: Final Report

A draft of the Final Report was assembled and produced for the Council during December 2006. Each institution received a copy of Part I, the Council-level Executive Summary, plus the portions of Part II applicable to their institution.

Comments from the Council and the institutions on a draft of the report were incorporated in the Final Report.

Phase VII: Presentation of Findings

At the time of this writing, the consultants' team of VFA | Paulien | NCHEMS plans to present the findings of the study to the Council during the spring of 2007.

Section 4. Facility Condition Assessment

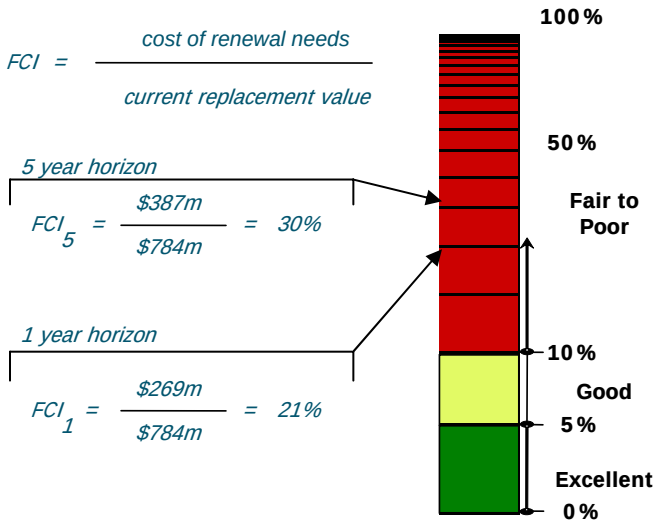
How do Kentucky Community & Technical College System's facilities compare?

At KCTCS, for the 198 facilities assessed, the estimated cost of system renewals currently due (1-YR Renewal Cost) is $269 million, and the estimated cost of renewals due within the next 5 years (5-YR Renewal Cost) is $387 million. (Note: present 2007 dollars are used in all reported numbers. Inflation factor considered = zero.)

The facilities assessed have a current replacement value of $1,277 million, so the Facility Condition Index (cost of renewals, divided by current replacement cost) for the portfolio is 21% for a 1-year horizon, and 30% for a 5-year horizon. Based on International Facility Managers Association standards, both the 1-year and 5-year FCIs would be considered "fair" to "poor" rankings.

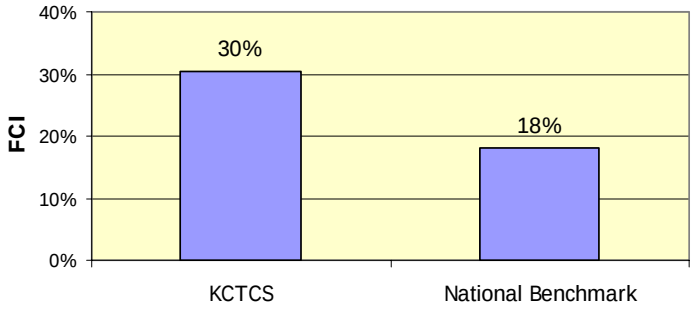
Compared to other higher education portfolios evaluated by the consultants' team over the past 5 years, KCTCS' is in worse condition (30% KCTCS 5-year FCI vs. 18% benchmark 5-year FCI).

Figure 4.1: Kentucky Community & Technical College System Facility Condition Index



Condition ratings based on International Facilities Managers Association standards.

Figure 4.2: KCTCS 5-Year FCI Comparison



What are the most urgent facility condition needs?

This Executive Summary highlights the capital renewal needs of KCTCS assets. More detailed information is available in Appendix A3 or in KPES' VFA.facility database (http://kcpe.vfafacility.com).

Of the assessed assets, KCTCS as a whole has 21 facilities in "Satisfactory" condition, 55 requiring "Remodeling A" work, 90 requiring "Remodeling B" work, and 32 requiring "Remodeling C" work. Based on condition alone, none of the assessed assets required Demolition or Termination.

Figures 4.4A & 4.4B ranks the facilities assessed at KCTCS by their 5-year Facility Condition Index. Figure 4.4A groups all assets into one list, and Figure 4.4B groups assets by campus.

To see which systems across the KCTCS portfolio require the most renewal work, Table 4.5 lists the 5-year facility renewal needs by major system type. Distribution Systems, Communications and Security, (Fixed) Equipment & Furnishings, Exterior Windows, Electrical Service & Distribution, Floor, Wall and Ceiling Finishes, and Lighting and Branch Wiring are the systems requiring the most immediate large scale investment.

A complete list of all facilities assessed, showing renewal needs by year, is included in Appendix A3 in the System Renewal Crosstab Report.

Figure 4.3: SUMMARY OF KCTCS BUIDLINGS BY CONDITION CODE

APPA CONDITION CODE	MIN FCI	# Bldgs	5-YR RENEWAL COSTS
1 - Satisfactory	0%*	21	$ 527,000
2 - Remodeling A	0%	55	49,512,000
3 - Remodeling B	25%	90	260,953,000
4 - Remodeling C	50%	32	75,779,000
5 – Demolition		0	0
6 - Termination		0	0
		198	$ 386,771,000

*No single need > $40k

A list detailing specific system renewals (and in which asset they are located) for years 2007 through 2022, is provided in Appendix A3, as the System Renewal Report.

The tables and reports included in this document represent only a small fraction of the ways the facility condition data can be sorted, organized, subtotaled and analyzed. More detailed (or differently organized) data is available in the VFA.facility software for data export and further detailed exploration.

Condition Study vs. Space Study Recommendations:
VFA's condition assessment (Section 4) and Paulien's space study (Section 5) evaluated facilities based on different criteria, and in some cases different recommendations are shown for the same building. This is entirely appropriate, given the different questions posed to each team. For example: VFA was asked to evaulate the condition of facilities based on their current use only, not considering the appropriateness or cost of adapting a building to a new use, while Paulien's space study specifically addressed the possibility of adaptive re-use for buildings. Also, VFA did not categorize any asset in 'Demolition' despite a small number of buildings having very high FCIs. (Assets with FCIs over 75% are sometimes considered good candidates for replacement.) The space study in Section 5 incorporated different standards for evaluating buildings, and may have reached different conclusions.

Table 4.4A: Kentucky Community & Technical College System Facilities, Ranked by 5-Year FCI Assets from all KCTCS institutions and campuses listed together

Institution: Campus	Asset Name	Asset Replacement Value	5YR FCI Cost	5YR FCI ↓	5-YR Building Condition Code
Kentucky Community & Technical College System					
WKyC&TC:Paducah	Mechanical Room	764,000	656,000	86%	4. Remodeling C
Hopkinsville CC	Utility Services - Storm Sewer	3,706,000	2,851,000	77%	4. Remodeling C
Hopkinsville CC	Utility Services - Sanitary Sewer	2,772,000	2,087,000	75%	4. Remodeling C
Bowling Green TC	Utility Services - Sanitary Sewer	737,000	522,000	71%	4. Remodeling C
Jefferson C&TC: Jefferson	Greenhouse # 3	93,000	64,000	69%	4. Remodeling C
SEKy C&TC:03	Mock Mine Bldg. Harlan Campus	869,000	592,000	68%	4. Remodeling C
SEKy C&TC:02	Heating Plant-S.East Cumberland Campus	795,000	517,000	65%	4. Remodeling C
Hazard C&TC:04	Lees Strong House	641,000	414,000	65%	4. Remodeling C
WKyC&TC:Paducah	M & O Bldg.	212,000	132,000	62%	4. Remodeling C
Hazard C&TC:04	Lees Jackson Hall	4,761,000	2,842,000	60%	4. Remodeling C
Jefferson C&TC: Jefferson	Greenhouse # 2	128,000	77,000	60%	4. Remodeling C
Madisonville CTC:01	Simulated Mine	1,156,000	689,000	60%	4. Remodeling C
Jefferson C&TC: Southwest	Student Center	4,651,000	2,767,000	59%	4. Remodeling C
Gateway C&TC: Covington	Building B	6,948,000	4,102,000	59%	4. Remodeling C
Hazard C&TC:04	Lees Van Meter Gymnasium	4,849,000	2,840,000	59%	4. Remodeling C
Madisonville CTC:01	Mine Occupations Bld	3,575,000	2,091,000	59%	4. Remodeling C
Jefferson C&TC: Southwest	Business Building	3,966,000	2,166,000	55%	4. Remodeling C
Henderson CC:05	H S Lackey Adm Bldg	8,026,000	4,382,000	55%	4. Remodeling C
Big Sandy C&TC: Betsey Ln	Betsy Lane S / Mine	1,002,000	545,000	54%	4. Remodeling C
SEKy C&TC:03	Administration Bldg	4,338,000	2,343,000	54%	4. Remodeling C
Gateway C&TC: Covington	Bldg A & C	14,213,000	7,661,000	54%	4. Remodeling C
Owensboro C&TC: 03	Owensboro Tc (Frederica Campus)	16,232,000	8,697,000	54%	4. Remodeling C
Bowling Green TC	Utility Services - Telecommunications	502,000	269,000	54%	4. Remodeling C
Somerset CC:06	Laurel South Main Building	11,040,000	5,832,000	53%	4. Remodeling C
Bowling Green TC	Bowling Green Building I	3,796,000	1,985,000	52%	4. Remodeling C
WKyC&TC:Paducah	Carson Hall	3,323,000	1,726,000	52%	4. Remodeling C
Jefferson C&TC: Jefferson	Equipment Shed	393,000	203,000	52%	4. Remodeling C
Bowling Green TC	Utility Services - Electrical	1,720,000	882,000	51%	4. Remodeling C
Hazard C&TC:01	Heavy Equipment Bldg.	4,633,000	2,368,000	51%	4. Remodeling C
Jefferson C&TC: Southwest	Admin Lrc Building	13,379,000	6,795,000	51%	3. Remodeling B
Jefferson C&TC: Jefferson	Bldg B, Jefferson Technical Campus	21,949,000	11,084,000	50%	4. Remodeling C

Table 4.4A: Kentucky Community & Technical College System Facilities, Ranked by 5-Year FCI Assets from all KCTCS institutions and campuses listed together

Institution: Campus	Asset Name	Asset Replacement Value	5YR FCI Cost	5YR FCI ↓	5-YR Building Condition Code
Jefferson C&TC: Southwest	Science Building	9,592,000	4,841,000	50%	3. Remodeling B
Hazard C&TC:04	Lees Parker Bookstore Bldg.	330,000	166,000	50%	4. Remodeling C
Madisonville CTC:03	Academic Building	5,850,000	2,943,000	50%	3. Remodeling B
Elizabethtown CC:04	Administration Bldg.	7,978,000	3,990,000	50%	3. Remodeling B
SEKy C&TC:03	Mine Industries Bldg. Harlan Campus	4,489,000	2,230,000	50%	4. Remodeling C
Jefferson C&TC: Southwest	Vocational Tech Inst	32,890,000	16,214,000	49%	3. Remodeling B
Ashland C&TC: College Dr	Ashland C College	37,979,000	18,645,000	49%	3. Remodeling B
Jefferson C&TC: Jefferson	Bldg A, Jefferson Technical Campus	14,479,000	7,105,000	49%	3. Remodeling B
Jefferson C&TC: Southwest	Arts And Humanities	4,126,000	2,024,000	49%	3. Remodeling B
Jefferson C&TC: Southwest	Library	10,456,000	5,128,000	49%	3. Remodeling B
WKyC&TC:Paducah	Carriage House	471,000	229,000	49%	3. Remodeling B
Hazard C&TC:01	Business And Office Bldg.	4,255,000	2,039,000	48%	3. Remodeling B
Hazard C&TC:04	Lees Meteer Hall	2,916,000	1,395,000	48%	3. Remodeling B
Bluegrass C&TC	South Wing	5,247,000	2,507,000	48%	3. Remodeling B
Big Sandy C&TC: Prestonsburg	Johnson Adm. Bldg.	8,707,000	4,158,000	48%	3. Remodeling B
Henderson CC:05	Student Activities	2,809,000	1,338,000	48%	3. Remodeling B
SEKy C&TC:02	Falkenstine Hall Cumberland Campus	4,756,000	2,239,000	47%	3. Remodeling B
Somerset CC:06	Meece Hall	6,674,000	3,128,000	47%	3. Remodeling B
Henderson CC:05	English Arts & Science Building	4,842,000	2,266,000	47%	3. Remodeling B
Madisonville CTC:01	Applied Technology Building	7,459,000	3,486,000	47%	3. Remodeling B
Owensboro C&TC: SE	Southeastern Campus	15,983,000	7,339,000	46%	3. Remodeling B
WKyC&TC:Paducah	Student Center / Fine Arts	9,500,000	4,335,000	46%	3. Remodeling B
Hopkinsville CC	Administration Building	4,779,000	2,167,000	45%	3. Remodeling B
Big Sandy C&TC: Prestonsburg	Pike Technology Bldg	7,662,000	3,448,000	45%	3. Remodeling B
Jefferson C&TC: Jefferson	Old Barn # 2	210,000	94,000	45%	3. Remodeling B
Hazard C&TC:04	Lees Robinson Library And Science Bldg.	4,569,000	2,044,000	45%	3. Remodeling B
Jefferson C&TC: Jefferson	Dairy Barn # 3	369,000	164,000	45%	3. Remodeling B
Big Sandy C&TC: Mayo	Building B	3,172,000	1,409,000	44%	3. Remodeling B
WKyC&TC:Paducah	Waller Hall	5,926,000	2,617,000	44%	3. Remodeling B
Bluegrass C&TC	Building A	10,065,000	4,423,000	44%	3. Remodeling B
Bowling Green TC	Bowling Green Building F	2,933,000	1,277,000	44%	3. Remodeling B
SEKy C&TC:01	Se Kyctc Pineville Campus	4,506,000	1,954,000	43%	3. Remodeling B
Gateway C&TC: Highland Hghts	Highland Hts Campus	10,801,000	4,647,000	43%	3. Remodeling B
Bowling Green TC	Bowling Green Building D	2,315,000	992,000	43%	3. Remodeling B

Table 4.4A: Kentucky Community & Technical College System Facilities, Ranked by 5-Year FCI Assets from all KCTCS institutions and campuses listed together

Institution: Campus	Asset Name	Asset Replacement Value	5YR FCI Cost	5YR FCI ↓	5-YR Building Condition Code
Bluegrass C&TC	Main	4,656,000	1,992,000	43%	3. Remodeling B
Bowling Green TC	Bowling Green Building G	10,409,000	4,380,000	42%	3. Remodeling B
Bowling Green TC	Bowling Green Building H	3,387,000	1,421,000	42%	3. Remodeling B
Madisonville CTC:01	Ace Building	1,601,000	671,000	42%	3. Remodeling B
Hazard C&TC:01	Industrial Education Bldg.	11,013,000	4,567,000	41%	3. Remodeling B
Hazard C&TC:04	Lees Couch Bldg.	238,000	99,000	41%	3. Remodeling B
Somerset CC:06	H.D. Strunk Learning Center	3,070,000	1,270,000	41%	3. Remodeling B
WKyC&TC:Paducah	Haws Gymnasium	5,148,000	2,096,000	41%	3. Remodeling B
Gateway C&TC: Edgewood	Edgewood Campus	9,016,000	3,631,000	40%	3. Remodeling B
Maysville C&TC: Rowan	Rowan Campus - Building A	5,314,000	2,127,000	40%	3. Remodeling B
Bluegrass C&TC	North Wing	6,045,000	2,414,000	40%	3. Remodeling B
Hazard C&TC:04	J. Phil Smith Administration Building	1,997,000	789,000	39%	3. Remodeling B
Bowling Green TC	Bowling Green Building J	3,245,000	1,267,000	39%	3. Remodeling B
Hazard C&TC:04	Leestelford Center	802,000	313,000	39%	3. Remodeling B
Hazard C&TC:04	Lees Bach Memorial Hall	1,061,000	413,000	39%	3. Remodeling B
Somerset CC:02	Transport & Mfg Bldg	9,715,000	3,780,000	39%	3. Remodeling B
WKyC&TC:Paducah	Anderson Technical Building	31,867,000	12,364,000	39%	3. Remodeling B
Big Sandy C&TC: Betsey Ln	Sim Mine Classroom	125,000	48,000	39%	3. Remodeling B
Henderson CC:05	J.M. Hartfield Bldg.	4,351,000	1,647,000	38%	3. Remodeling B
Bluegrass C&TC	Building B	2,570,000	973,000	38%	3. Remodeling B
Jefferson C&TC: Southwest	Broadway Building	8,733,000	3,266,000	37%	3. Remodeling B
WKyC&TC:Paducah	Rosenthal Hall	5,123,000	1,913,000	37%	3. Remodeling B
Madisonville CTC:02	Glema Mahr Center	11,247,000	4,187,000	37%	3. Remodeling B
Bowling Green TC	Bowling Green Building B	1,990,000	731,000	37%	3. Remodeling B
Bowling Green TC	Bowling Green Building C	2,977,000	1,090,000	37%	3. Remodeling B
Bowling Green TC	Bowling Green Building A	3,623,000	1,288,000	36%	3. Remodeling B
Madisonville CTC:02	Gray Building	19,222,000	6,822,000	35%	3. Remodeling B
Jefferson C&TC: Southwest	Seminary Building	17,039,000	5,924,000	35%	3. Remodeling B
Somerset CC:06	Stoner Hall	4,748,000	1,631,000	34%	3. Remodeling B
Somerset CC:06	Laurel Campus North, Laurel Center	3,194,000	1,088,000	34%	3. Remodeling B
Bowling Green TC	Bowling Green Building E	1,559,000	531,000	34%	3. Remodeling B
Bowling Green TC	Glasgow Campus	3,414,000	1,162,000	34%	3. Remodeling B
WKyC&TC:Paducah	Matheson Learning Center	7,945,000	2,654,000	33%	3. Remodeling B
Hopkinsville CC	Utility Services - Telecommunications	404,000	135,000	33%	3. Remodeling B
Jefferson C&TC: Southwest	Hartford Building	49,883,000	16,604,000	33%	3. Remodeling B
Elizabethtown CC:04	Student Center	4,012,000	1,318,000	33%	3. Remodeling B
SEKy C&TC:02	Chrisman Hall, Cumberland Campus	3,618,000	1,187,000	33%	3. Remodeling B

Table 4.4A: Kentucky Community & Technical College System Facilities, Ranked by 5-Year FCI Assets from all KCTCS institutions and campuses listed together

Institution: Campus	Asset Name	Asset Replacement Value	5YR FCI Cost	5YR FCI ↓	5-YR Building Condition Code
Maysville C&TC: Rowan	Rowan Campus - Building C	3,383,000	1,082,000	32%	3. Remodeling B
Hazard C&TC:03, 05	Knott County Branch	1,447,000	462,000	32%	3. Remodeling B
Hazard C&TC:02	Jolly Classroom Center East	8,666,000	2,749,000	32%	3. Remodeling B
Somerset CC:02	Academic Bldg	3,323,000	1,050,000	32%	3. Remodeling B
Maysville C&TC: Rowan	Adminstrative Office - Building B	6,038,000	1,861,000	31%	3. Remodeling B
Hopkinsville CC	Learning Resource Center	4,072,000	1,250,000	31%	3. Remodeling B
Elizabethtown CC:00	Occupational-Technical Bldg	28,127,000	8,633,000	31%	3. Remodeling B
Owensboro C&TC: Main	Learning Resources	8,608,000	2,611,000	30%	3. Remodeling B
Jefferson C&TC: Jefferson	Cow&Bull Barn #1	402,000	120,000	30%	3. Remodeling B
Elizabethtown CC:04	Academic/Technical	11,927,000	3,522,000	30%	3. Remodeling B
Jefferson C&TC: Jefferson	Classroom & Adm	602,000	178,000	29%	3. Remodeling B
Hopkinsville CC	Academic Building	10,788,000	3,174,000	29%	3. Remodeling B
Hazard C&TC:04	Lees College Avenue Bldg.	1,649,000	485,000	29%	3. Remodeling B
WKyC&TC:Paducah	Allied Health Building	11,521,000	3,373,000	29%	3. Remodeling B
Ashland C&TC: College Dr	Ashland Academic/Lrc	8,655,000	2,464,000	28%	3. Remodeling B
Hazard C&TC:01	Storage Bldg.	588,000	161,000	27%	3. Remodeling B
Bowling Green TC	Glasgow Classroom	1,643,000	450,000	27%	3. Remodeling B
Owensboro C&TC: Main	Administration Bldg	3,084,000	829,000	27%	3. Remodeling B
SEKy C&TC:02	Newman Hall Cumberland Campus	4,874,000	1,289,000	26%	3. Remodeling B
Owensboro C&TC: Main	Technical Education	7,055,000	1,858,000	26%	2. Remodeling A
Somerset CC:02	Administration Bldg	729,000	182,000	25%	1. Satisfactory
Owensboro C&TC: Main	Humanities Building	5,020,000	1,251,000	25%	2. Remodeling A
Somerset CC:06	Cooper Hall	3,421,000	844,000	25%	2. Remodeling A
Big Sandy C&TC: Mayo	Building F	6,947,000	1,710,000	25%	2. Remodeling A
Hopkinsville CC	Auditorium Building	6,375,000	1,566,000	25%	2. Remodeling A
Jefferson C&TC: Jefferson	Greenhouse # 4	144,000	35,000	24%	3. Remodeling B
Owensboro C&TC: Main	Science Building	7,662,000	1,768,000	23%	2. Remodeling A
Big Sandy C&TC: Mayo	Building E	8,938,000	2,059,000	23%	2. Remodeling A
Elizabethtown CC:04	Science Building	9,034,000	1,983,000	22%	2. Remodeling A
Owensboro C&TC: Main	Maintenance Building	916,000	201,000	22%	2. Remodeling A
Big Sandy C&TC: Prestonsburg	Magoffin Lrc Build	8,099,000	1,728,000	21%	2. Remodeling A
Big Sandy C&TC: Prestonsburg	Campbell Science Bld	7,111,000	1,481,000	21%	2. Remodeling A
Big Sandy C&TC: Mayo	Building D	6,589,000	1,362,000	21%	2. Remodeling A

Table 4.4A: Kentucky Community & Technical College System Facilities, Ranked by 5-Year FCI Assets from all KCTCS institutions and campuses listed together

Institution: Campus	Asset Name	Asset Replacement Value	5YR FCI Cost	5YR FCI ↓	5-YR Building Condition Code
Maysville C&TC	Administration Building	13,900,000	2,782,000	20%	2. Remodeling A
Elizabethtown CC:04	Learning Resource Center	5,903,000	1,157,000	20%	2. Remodeling A
Maysville C&TC	Denham Academic Bldg	4,725,000	913,000	19%	2. Remodeling A
Hazard C&TC:02	Jolly Classroom Center West	6,881,000	1,318,000	19%	2. Remodeling A
WKyC&TC:Paducah	Purchase Training Center	1,949,000	357,000	18%	2. Remodeling A
Somerset CC:02	Diesel Bldg	818,000	147,000	18%	1. Satisfactory
WKyC&TC:Paducah	Nemer Building	1,918,000	340,000	18%	2. Remodeling A
Jefferson C&TC: Southwest	Social Sciences Bldg	7,699,000	1,350,000	18%	2. Remodeling A
Somerset CC:02	Student Center	527,000	92,000	17%	1. Satisfactory
SEKy C&TC:04	Whitesburg Center	3,292,000	556,000	17%	2. Remodeling A
Bowling Green TC	Kentucky Advance Technology Institute	11,799,000	1,971,000	17%	2. Remodeling A
Hazard C&TC:01	Devert Owens Bldg.	9,076,000	1,460,000	16%	2. Remodeling A
Somerset CC:05	Mccreary Ctr Somr Cc	4,709,000	722,000	15%	2. Remodeling A
Bowling Green TC	Utility Services - Domestic Water	1,170,000	165,000	14%	2. Remodeling A
Maysville C&TC: Rowan	Agriculture	144,000	20,000	14%	1. Satisfactory
Owensboro C&TC: Main	Owensboro Classroom	5,578,000	732,000	13%	2. Remodeling A
Owensboro C&TC: Main	Student Center	4,534,000	514,000	11%	2. Remodeling A
Big Sandy C&TC: Hager Hill	Bldg J / Hager Hill Campus	6,258,000	679,000	11%	2. Remodeling A
SEKy C&TC:02	Fine Arts/App Ctr Cumberland Campus	9,347,000	943,000	10%	2. Remodeling A
Madisonville CTC:03	Hatley Bldg	10,169,000	1,021,000	10%	2. Remodeling A
Bluegrass C&TC	Manuf. Technology	11,824,000	1,166,000	10%	2. Remodeling A
Big Sandy C&TC: Mayo	Building A	1,763,000	169,000	10%	2. Remodeling A
Madisonville CTC:02	Learning Resource Center	5,774,000	554,000	10%	2. Remodeling A
Hopkinsville CC	Welding Building	316,000	30,000	9%	1. Satisfactory
Bluegrass C&TC	Anderson Co Extsn	10,356,000	879,000	8%	2. Remodeling A
Hopkinsville CC	Technology Center	16,684,000	1,352,000	8%	2. Remodeling A
Jefferson C&TC: Southwest	Jefferson Community Technical College, Shelby County Campus	12,576,000	962,000	8%	2. Remodeling A
Big Sandy C&TC: Prestonsburg	Cl Rm Health Ed Ctr	5,534,000	402,000	7%	2. Remodeling A
Big Sandy C&TC: Pikeville	Pikeville Campus	14,564,000	1,042,000	7%	2. Remodeling A
Henderson CC:05	Auditorium/Fine Arts	11,701,000	833,000	7%	2. Remodeling A
SEKy C&TC:06	Science And Tech Bldg. Middlesboro Campus	6,743,000	476,000	7%	2. Remodeling A
Maysville C&TC	Calvert Student Ctr	10,775,000	746,000	7%	2. Remodeling A
Madisonville CTC:02	Science Tech Center (Joe C. Davis Science Bldg.)	6,636,000	442,000	7%	2. Remodeling A
SEKy C&TC:06	Administration Building , Harlan Campus	3,314,000	219,000	7%	2. Remodeling A

Table 4.4A: Kentucky Community & Technical College System Facilities, Ranked by 5-Year FCI Assets from all KCTCS institutions and campuses listed together

Institution: Campus	Asset Name	Asset Replacement Value	5YR FCI Cost	5YR FCI ↓	5-YR Building Condition Code
Madisonville CTC:04	Muhlenberg Cl Rm Bld	4,687,000	268,000	6%	2. Remodeling A
SEKy C&TC:06	Liberal Arts Building Middlesboro Campus	2,757,000	155,000	6%	2. Remodeling A
Hazard C&TC:02	First Federal Bldg.	19,651,000	1,103,000	6%	2. Remodeling A
Ashland C&TC: College Dr	Goodpaster Bldg	8,869,000	495,000	6%	2. Remodeling A
WKyC&TC:Paducah	Crounse Hall	18,142,000	890,000	5%	2. Remodeling A
Somerset CC:06	A E Blakley A/T Bldg	11,086,000	543,000	5%	2. Remodeling A
Somerset CC:06	H Rogers Student Commons	11,089,000	530,000	5%	2. Remodeling A
Big Sandy C&TC: Mayo	Building I	525,000	19,000	4%	1. Satisfactory
Big Sandy C&TC: Mayo	Building C	4,361,000	146,000	3%	2. Remodeling A
Elizabethtown CC:00	Central Reg Ps Ed Ct	16,294,000	541,000	3%	2. Remodeling A
SEKy C&TC:03	Student Services Bld. Harlan Campus	7,033,000	229,000	3%	2. Remodeling A
Henderson CC:05	Hend Academic/Tech	13,056,000	376,000	3%	2. Remodeling A
Somerset CC:06	Laurel Campus North, Serpec	4,210,000	113,000	3%	2. Remodeling A
SEKy C&TC:02	Generator Shelter Cumberland Campus	13,000	0	1%	1. Satisfactory
Maysville CC	Maysville Tech Ctr	13,448,000	95,000	1%	2. Remodeling A
Maysville CC	Licking Valley Ctr	5,441,000	36,000	1%	1. Satisfactory
Ashland C&TC: Tech Dr	Technology Dr Campus	9,291,000	0	0%	1. Satisfactory
Big Sandy C&TC: Prestonsburg	East Ky Science Ctr	2,108,000	0	0%	1. Satisfactory
Big Sandy C&TC: Prestonsburg	Ne Reg Ps Ed Ctr	8,012,000	0	0%	1. Satisfactory
Bluegrass C&TC	Danville Campus	10,687,000	0	0%	1. Satisfactory
Hazard C&TC:02	Storage Bldg.	8,000	0	0%	1. Satisfactory
SEKy C&TC:04	Belinda Mason Building Whitesburg Campus	4,141,000	0	0%	1. Satisfactory
Somerset CC:06	Clinton Center	7,296,000	0	0%	1. Satisfactory
Somerset CC:06	Clinton Center Storage	156,000	0	0%	1. Satisfactory
	TOTAL	**1,277,379,000**	**386,776,000**	**30%**	

Table 4.4B: Kentucky Community & Technical College System Facilites, Ranked by 5-Year FCI
Assets grouped by KCTCS institution and campus

Institution: Campus	Asset Name	Asset Replacement Value	5YR FCI Cost	5YR FCI ↓	5-YR Building Condition Code
Kentucky Community & Technical College System					
Ashland C&TC: College Dr	Ashland C College	37,979,000	18,645,000	49%	3. Remodeling B
Ashland C&TC: College Dr	Ashland Academic/Lrc	8,655,000	2,464,000	28%	3. Remodeling B
Ashland C&TC: College Dr	Goodpaster Bldg	8,869,000	495,000	6%	2. Remodeling A
Ashland C&TC: College Dr Total	**3 asset(s)**	**55,503,000**	**21,604,000**	**39%**	
Ashland C&TC: Tech Dr	Technology Dr Campus	9,291,000	0	0%	1. Satisfactory
Ashland C&TC: Tech Dr Total	**1 asset(s)**	**9,291,000**	**0**	**0%**	
Big Sandy C&TC: Betsey Ln	Betsy Lane S / Mine	1,002,000	545,000	54%	4. Remodeling C
Big Sandy C&TC: Betsey Ln	Sim Mine Classroom	125,000	48,000	39%	3. Remodeling B
Big Sandy C&TC: Betsey Ln Total	**2 asset(s)**	**1,127,000**	**593,000**	**53%**	
Big Sandy C&TC: Hager Hill	Bldg J / Hager Hill Campus	6,258,000	679,000	11%	2. Remodeling A
Big Sandy C&TC: Hager Hill Total	**1 asset(s)**	**6,258,000**	**679,000**	**11%**	
Big Sandy C&TC: Mayo	Building B	3,172,000	1,409,000	44%	3. Remodeling B
Big Sandy C&TC: Mayo	Building E	8,938,000	2,059,000	23%	2. Remodeling A
Big Sandy C&TC: Mayo	Building A	1,763,000	169,000	10%	2. Remodeling A
Big Sandy C&TC: Mayo	Building D	6,589,000	1,362,000	21%	2. Remodeling A
Big Sandy C&TC: Mayo	Building F	6,947,000	1,710,000	25%	2. Remodeling A
Big Sandy C&TC: Mayo	Building I	525,000	19,000	4%	1. Satisfactory
Big Sandy C&TC: Mayo	Building C	4,361,000	146,000	3%	2. Remodeling A
Big Sandy C&TC: Mayo Total	**7 asset(s)**	**32,295,000**	**6,874,000**	**21%**	
Big Sandy C&TC: Pikeville	Pikeville Campus	14,564,000	1,042,000	7%	2. Remodeling A
Big Sandy C&TC: Pikeville Total	**1 asset(s)**	**14,564,000**	**1,042,000**	**7%**	
Big Sandy C&TC: Prestonsburg	Johnson Adm. Bldg.	8,707,000	4,158,000	48%	3. Remodeling B
Big Sandy C&TC: Prestonsburg	Magoffin Lrc Build	8,099,000	1,728,000	21%	2. Remodeling A
Big Sandy C&TC: Prestonsburg	Campbell Science Bld	7,111,000	1,481,000	21%	2. Remodeling A
Big Sandy C&TC: Prestonsburg	Pike Technology Bldg	7,662,000	3,448,000	45%	3. Remodeling B
Big Sandy C&TC: Prestonsburg	Cl Rm Health Ed Ctr	5,534,000	402,000	7%	2. Remodeling A
Big Sandy C&TC: Prestonsburg	East Ky Science Ctr	2,108,000	0	0%	1. Satisfactory
Big Sandy C&TC: Prestonsburg	Ne Reg Ps Ed Ctr	8,012,000	0	0%	1. Satisfactory
Big Sandy C&TC: Prestonsburg Total	**7 asset(s)**	**47,233,000**	**11,217,000**	**24%**	
Bluegrass C&TC	Building A	10,065,000	4,423,000	44%	3. Remodeling B
Bluegrass C&TC	South Wing	5,247,000	2,507,000	48%	3. Remodeling B
Bluegrass C&TC	Main	4,656,000	1,992,000	43%	3. Remodeling B

Table 4.4B: Kentucky Community & Technical College System Facilites, Ranked by 5-Year FCI
Assets grouped by KCTCS institution and campus

Institution: Campus	Asset Name	Asset Replacement Value	5YR FCI Cost	5YR FCI ↓	5-YR Building Condition Code
Bluegrass C&TC	North Wing	6,045,000	2,414,000	40%	3. Remodeling B
Bluegrass C&TC	Manuf. Technology	11,824,000	1,166,000	10%	2. Remodeling A
Bluegrass C&TC	Building B	2,570,000	973,000	38%	3. Remodeling B
Bluegrass C&TC	Anderson Co Extsn	10,356,000	879,000	8%	2. Remodeling A
Bluegrass C&TC	Danville Campus	10,687,000	0	0%	1. Satisfactory
Bluegrass C&TC Total	**8 asset(s)**	**61,450,000**	**14,354,000**	**23%**	
Bowling Green TC	Bowling Green Building G	10,409,000	4,380,000	42%	3. Remodeling B
Bowling Green TC	Glasgow Campus	3,414,000	1,162,000	34%	3. Remodeling B
Bowling Green TC	Utility Services - Electrical	1,720,000	882,000	51%	4. Remodeling C
Bowling Green TC	Bowling Green Building F	2,933,000	1,277,000	44%	3. Remodeling B
Bowling Green TC	Bowling Green Building I	3,796,000	1,985,000	52%	4. Remodeling C
Bowling Green TC	Bowling Green Building A	3,623,000	1,288,000	36%	3. Remodeling B
Bowling Green TC	Bowling Green Building D	2,315,000	992,000	43%	3. Remodeling B
Bowling Green TC	Bowling Green Building H	3,387,000	1,421,000	42%	3. Remodeling B
Bowling Green TC	Utility Services - Sanitary Sewer	737,000	522,000	71%	4. Remodeling C
Bowling Green TC	Bowling Green Building J	3,245,000	1,267,000	39%	3. Remodeling B
Bowling Green TC	Bowling Green Building C	2,977,000	1,090,000	37%	3. Remodeling B
Bowling Green TC	Bowling Green Building B	1,990,000	731,000	37%	3. Remodeling B
Bowling Green TC	Glasgow Classroom	1,643,000	450,000	27%	3. Remodeling B
Bowling Green TC	Bowling Green Building E	1,559,000	531,000	34%	3. Remodeling B
Bowling Green TC	Utility Services - Domestic Water	1,170,000	165,000	14%	2. Remodeling A
Bowling Green TC	Utility Services - Telecommunications	502,000	269,000	54%	4. Remodeling C
Bowling Green TC	Kentucky Advance Technology Institute	11,799,000	1,971,000	17%	2. Remodeling A
Bowling Green TC Total	**17 asset(s)**	**57,219,000**	**20,383,000**	**36%**	
Elizabethtown CC:00	Occupational-Technical Bldg	28,127,000	8,633,000	31%	3. Remodeling B
Elizabethtown CC:00	Central Reg Ps Ed Ct	16,294,000	541,000	3%	2. Remodeling A
Elizabethtown CC:00 Total	**2 asset(s)**	**44,421,000**	**9,174,000**	**21%**	
Elizabethtown CC:04	Administration Bldg.	7,978,000	3,990,000	50%	3. Remodeling B
Elizabethtown CC:04	Science Building	9,034,000	1,983,000	22%	2. Remodeling A
Elizabethtown CC:04	Academic/Technical	11,927,000	3,522,000	30%	3. Remodeling B
Elizabethtown CC:04	Student Center	4,012,000	1,318,000	33%	3. Remodeling B
Elizabethtown CC:04	Learning Resource Center	5,903,000	1,157,000	20%	2. Remodeling A
Elizabethtown CC:04 Total	**5 asset(s)**	**38,854,000**	**11,970,000**	**31%**	
Gateway C&TC: Covington	Bldg A & C	14,213,000	7,661,000	54%	4. Remodeling C
Gateway C&TC: Covington	Building B	6,948,000	4,102,000	59%	4. Remodeling C
Gateway C&TC: Covington Total	**2 asset(s)**	**21,161,000**	**11,763,000**	**56%**	
Gateway C&TC: Edgewood	Edgewood Campus	9,016,000	3,631,000	40%	3. Remodeling B
Gateway C&TC: Edgewood Total	**1 asset(s)**	**9,016,000**	**3,631,000**	**40%**	

Table 4.4B: Kentucky Community & Technical College System Facilites, Ranked by 5-Year FCI
Assets grouped by KCTCS institution and campus

Institution: Campus	Asset Name	Asset Replacement Value	5YR FCI Cost	5YR FCI ↓	5-YR Building Condition Code
Gateway C&TC: Highland Hghts	Highland Hts Campus	10,801,000	4,647,000	43%	3. Remodeling B
Gateway C&TC: Highland Hghts Total	**1 asset(s)**	**10,801,000**	**4,647,000**	**43%**	
Hazard C&TC:01	Industrial Education Bldg.	11,013,000	4,567,000	41%	3. Remodeling B
Hazard C&TC:01	Heavy Equipment Bldg.	4,633,000	2,368,000	51%	4. Remodeling C
Hazard C&TC:01	Business And Office Bldg.	4,255,000	2,039,000	48%	3. Remodeling B
Hazard C&TC:01	Devert Owens Bldg.	9,076,000	1,460,000	16%	2. Remodeling A
Hazard C&TC:01	Storage Bldg.	588,000	161,000	27%	3. Remodeling B
Hazard C&TC:01 Total	**5 asset(s)**	**29,565,000**	**10,595,000**	**36%**	
Hazard C&TC:02	Jolly Classroom Center East	8,666,000	2,749,000	32%	3. Remodeling B
Hazard C&TC:02	Jolly Classroom Center West	6,881,000	1,318,000	19%	2. Remodeling A
Hazard C&TC:02	First Federal Bldg.	19,651,000	1,103,000	6%	2. Remodeling A
Hazard C&TC:02	Storage Bldg.	8,000	0	0%	1. Satisfactory
Hazard C&TC:02 Total	**4 asset(s)**	**35,206,000**	**5,170,000**	**15%**	
Hazard C&TC:03, 05	Knott County Branch	1,447,000	462,000	32%	3. Remodeling B
Hazard C&TC:03, 05 Total	**1 asset(s)**	**1,447,000**	**462,000**	**32%**	
Hazard C&TC:04	Lees Jackson Hall	4,761,000	2,842,000	60%	4. Remodeling C
Hazard C&TC:04	Lees Van Meter Gymnasium	4,849,000	2,840,000	59%	4. Remodeling C
Hazard C&TC:04	Lees Robinson Library And Science Bldg.	4,569,000	2,044,000	45%	3. Remodeling B
Hazard C&TC:04	Lees Meteer Hall	2,916,000	1,395,000	48%	3. Remodeling B
Hazard C&TC:04	J. Phil Smith Administration Building	1,997,000	789,000	39%	3. Remodeling B
Hazard C&TC:04	Lees Bach Memorial Hall	1,061,000	413,000	39%	3. Remodeling B
Hazard C&TC:04	Lees Strong House	641,000	414,000	65%	4. Remodeling C
Hazard C&TC:04	Lees College Avenue Bldg.	1,649,000	485,000	29%	3. Remodeling B
Hazard C&TC:04	Leestelford Center	802,000	313,000	39%	3. Remodeling B
Hazard C&TC:04	Lees Parker Bookstore Bldg.	330,000	166,000	50%	4. Remodeling C
Hazard C&TC:04	Lees Couch Bldg.	238,000	99,000	41%	3. Remodeling B
Hazard C&TC:04 Total	**11 asset(s)**	**23,813,000**	**11,800,000**	**50%**	
Henderson CC:05	H S Lackey Adm Bldg	8,026,000	4,382,000	55%	4. Remodeling C
Henderson CC:05	English Arts & Science Building	4,842,000	2,266,000	47%	3. Remodeling B
Henderson CC:05	Student Activities	2,809,000	1,338,000	48%	3. Remodeling B
Henderson CC:05	J.M. Hartfield Bldg.	4,351,000	1,647,000	38%	3. Remodeling B
Henderson CC:05	Auditorium/Fine Arts	11,701,000	833,000	7%	2. Remodeling A
Henderson CC:05	Hend Academic/Tech	13,056,000	376,000	3%	2. Remodeling A
Henderson CC:05 Total	**6 asset(s)**	**44,785,000**	**10,842,000**	**24%**	
Hopkinsville CC	Utility Services - Storm Sewer	3,706,000	2,851,000	77%	4. Remodeling C
Hopkinsville CC	Academic Building	10,788,000	3,174,000	29%	3. Remodeling B
Hopkinsville CC	Utility Services - Sanitary Sewer	2,772,000	2,087,000	75%	4. Remodeling C
Hopkinsville CC	Administration Building	4,779,000	2,167,000	45%	3. Remodeling B
Hopkinsville CC	Auditorium Building	6,375,000	1,566,000	25%	2. Remodeling A
Hopkinsville CC	Learning Resource Center	4,072,000	1,250,000	31%	3. Remodeling B

Table 4.4B: Kentucky Community & Technical College System Facilites, Ranked by 5-Year FCI
Assets grouped by KCTCS institution and campus

Institution: Campus	Asset Name	Asset Replacement Value	5YR FCI Cost	5YR FCI ↓	5-YR Building Condition Code
Hopkinsville CC	Technology Center	16,684,000	1,352,000	8%	2. Remodeling A
Hopkinsville CC	Utility Services - Telecommunications	404,000	135,000	33%	3. Remodeling B
Hopkinsville CC	Welding Building	316,000	30,000	9%	1. Satisfactory
Hopkinsville CC Total	**9 asset(s)**	**49,896,000**	**14,612,000**	**29%**	
Jefferson C&TC: Jefferson	Bldg B, Jefferson Technical Campus	21,949,000	11,084,000	50%	4. Remodeling C
Jefferson C&TC: Jefferson	Bldg A, Jefferson Technical Campus	14,479,000	7,105,000	49%	3. Remodeling B
Jefferson C&TC: Jefferson	Equipment Shed	393,000	203,000	52%	4. Remodeling C
Jefferson C&TC: Jefferson	Classroom & Adm	602,000	178,000	29%	3. Remodeling B
Jefferson C&TC: Jefferson	Old Barn # 2	210,000	94,000	45%	3. Remodeling B
Jefferson C&TC: Jefferson	Dairy Barn # 3	369,000	164,000	45%	3. Remodeling B
Jefferson C&TC: Jefferson	Cow&Bull Barn #1	402,000	120,000	30%	3. Remodeling B
Jefferson C&TC: Jefferson	Greenhouse # 4	144,000	35,000	24%	3. Remodeling B
Jefferson C&TC: Jefferson	Greenhouse # 2	128,000	77,000	60%	4. Remodeling C
Jefferson C&TC: Jefferson	Greenhouse # 3	93,000	64,000	69%	4. Remodeling C
Jefferson C&TC: Jefferson Total	**10 asset(s)**	**38,769,000**	**19,124,000**	**49%**	
Jefferson C&TC: Southwest	Hartford Building	49,883,000	16,604,000	33%	3. Remodeling B
Jefferson C&TC: Southwest	Vocational Tech Inst	32,890,000	16,214,000	49%	3. Remodeling B
Jefferson C&TC: Southwest	Seminary Building	17,039,000	5,924,000	35%	3. Remodeling B
Jefferson C&TC: Southwest	Library	10,456,000	5,128,000	49%	3. Remodeling B
Jefferson C&TC: Southwest	Admin Lrc Building	13,379,000	6,795,000	51%	3. Remodeling B
Jefferson C&TC: Southwest	Science Building	9,592,000	4,841,000	50%	3. Remodeling B
Jefferson C&TC: Southwest	Broadway Building	8,733,000	3,266,000	37%	3. Remodeling B
Jefferson C&TC: Southwest	Student Center	4,651,000	2,767,000	59%	4. Remodeling C
Jefferson C&TC: Southwest	Business Building	3,966,000	2,166,000	55%	4. Remodeling C
Jefferson C&TC: Southwest	Arts And Humanities	4,126,000	2,024,000	49%	3. Remodeling B
Jefferson C&TC: Southwest	Social Sciences Bldg	7,699,000	1,350,000	18%	2. Remodeling A
Jefferson C&TC: Southwest	Jefferson Community Technical College, Shelby County Campus	12,576,000	962,000	8%	2. Remodeling A
Jefferson C&TC: Southwest Total	**12 asset(s)**	**174,990,000**	**68,041,000**	**39%**	
Madisonville CTC:01	Applied Technology Building	7,459,000	3,486,000	47%	3. Remodeling B
Madisonville CTC:01	Mine Occupations Bld	3,575,000	2,091,000	59%	4. Remodeling C
Madisonville CTC:01	Simulated Mine	1,156,000	689,000	60%	4. Remodeling C
Madisonville CTC:01	Ace Building	1,601,000	671,000	42%	3. Remodeling B
Madisonville CTC:01 Total	**4 asset(s)**	**13,791,000**	**6,937,000**	**50%**	
Madisonville CTC:02	Gray Building	19,222,000	6,822,000	35%	3. Remodeling B
Madisonville CTC:02	Glema Mahr Center	11,247,000	4,187,000	37%	3. Remodeling B
Madisonville CTC:02	Learning Resource Center	5,774,000	554,000	10%	2. Remodeling A
Madisonville CTC:02	Science Tech Center (Joe C. Davis Science Bldg.)	6,636,000	442,000	7%	2. Remodeling A
Madisonville CTC:02 Total	**4 asset(s)**	**42,879,000**	**12,005,000**	**28%**	

Table 4.4B: Kentucky Community & Technical College System Facilites, Ranked by 5-Year FCI
Assets grouped by KCTCS institution and campus

Institution: Campus	Asset Name	Asset Replacement Value	5YR FCI Cost	5YR FCI ↓	5-YR Building Condition Code
Madisonville CTC:03	Academic Building	5,850,000	2,943,000	50%	3. Remodeling B
Madisonville CTC:03	Hatley Bldg	10,169,000	1,021,000	10%	2. Remodeling A
Madisonville CTC:03 Total	**2 asset(s)**	**16,019,000**	**3,964,000**	**25%**	
Madisonville CTC:04	Muhlenberg Cl Rm Bld	4,687,000	268,000	6%	2. Remodeling A
Madisonville CTC:04 Total	**1 asset(s)**	**4,687,000**	**268,000**	**6%**	
Maysville C&TC	Administration Building	13,900,000	2,782,000	20%	2. Remodeling A
Maysville C&TC	Denham Academic Bldg	4,725,000	913,000	19%	2. Remodeling A
Maysville C&TC	Calvert Student Ctr	10,775,000	746,000	7%	2. Remodeling A
Maysville C&TC Total	**3 asset(s)**	**29,400,000**	**4,441,000**	**15%**	
Maysville C&TC: Rowan	Rowan Campus - Building A	5,314,000	2,127,000	40%	3. Remodeling B
Maysville C&TC: Rowan	Rowan Campus - Building C	3,383,000	1,082,000	32%	3. Remodeling B
Maysville C&TC: Rowan	Adminstrative Office - Building B	6,038,000	1,861,000	31%	3. Remodeling B
Maysville C&TC: Rowan	Agriculture	144,000	20,000	14%	1. Satisfactory
Maysville C&TC: Rowan Total	**4 asset(s)**	**14,879,000**	**5,090,000**	**34%**	
Maysville CC	Maysville Tech Ctr	13,448,000	95,000	1%	2. Remodeling A
Maysville CC	Licking Valley Ctr	5,441,000	36,000	1%	1. Satisfactory
Maysville CC Total	**2 asset(s)**	**18,889,000**	**131,000**	**1%**	
Owensboro C&TC: 03	Owensboro Tc (Frederica Campus)	16,232,000	8,697,000	54%	4. Remodeling C
Owensboro C&TC: 03 Total	**1 asset(s)**	**16,232,000**	**8,697,000**	**54%**	
Owensboro C&TC: Main	Learning Resources	8,608,000	2,611,000	30%	3. Remodeling B
Owensboro C&TC: Main	Science Building	7,662,000	1,768,000	23%	2. Remodeling A
Owensboro C&TC: Main	Technical Education	7,055,000	1,858,000	26%	2. Remodeling A
Owensboro C&TC: Main	Administration Bldg	3,084,000	829,000	27%	3. Remodeling B
Owensboro C&TC: Main	Humanities Building	5,020,000	1,251,000	25%	2. Remodeling A
Owensboro C&TC: Main	Owensboro Classroom	5,578,000	732,000	13%	2. Remodeling A
Owensboro C&TC: Main	Student Center	4,534,000	514,000	11%	2. Remodeling A
Owensboro C&TC: Main	Maintenance Building	916,000	201,000	22%	2. Remodeling A
Owensboro C&TC: Main Total	**8 asset(s)**	**42,457,000**	**9,764,000**	**23%**	
Owensboro C&TC: SE	Southeastern Campus	15,983,000	7,339,000	46%	3. Remodeling B
Owensboro C&TC: SE Total	**1 asset(s)**	**15,983,000**	**7,339,000**	**46%**	
SEKy C&TC:01	Se Kyctc Pineville Campus	4,506,000	1,954,000	43%	3. Remodeling B
SEKy C&TC:01 Total	**1 asset(s)**	**4,506,000**	**1,954,000**	**43%**	
SEKy C&TC:02	Falkenstine Hall Cumberland Campus	4,756,000	2,239,000	47%	3. Remodeling B
SEKy C&TC:02	Newman Hall Cumberland Campus	4,874,000	1,289,000	26%	3. Remodeling B
SEKy C&TC:02	Chrisman Hall, Cumberland Campus	3,618,000	1,187,000	33%	3. Remodeling B
SEKy C&TC:02	Fine Arts/App Ctr Cumberland Campus	9,347,000	943,000	10%	2. Remodeling A
SEKy C&TC:02	Heating Plant-S.East Cumberland Campus	795,000	517,000	65%	4. Remodeling C

Table 4.4B: Kentucky Community & Technical College System Facilites, Ranked by 5-Year FCI
Assets grouped by KCTCS institution and campus

Institution: Campus	Asset Name	Asset Replacement Value	5YR FCI Cost	5YR FCI ↓	5-YR Building Condition Code
SEKy C&TC:02	Generator Shelter Cumberland Campus	13,000	0	1%	1. Satisfactory
SEKy C&TC:02 Total	**6 asset(s)**	**23,403,000**	**6,175,000**	**26%**	
SEKy C&TC:03	Administration Bldg	4,338,000	2,343,000	54%	4. Remodeling C
SEKy C&TC:03	Mine Industries Bldg. Harlan Campus	4,489,000	2,230,000	50%	4. Remodeling C
SEKy C&TC:03	Mock Mine Bldg. Harlan Campus	869,000	592,000	68%	4. Remodeling C
SEKy C&TC:03	Student Services Bld. Harlan Campus	7,033,000	229,000	3%	2. Remodeling A
SEKy C&TC:03 Total	**4 asset(s)**	**16,729,000**	**5,394,000**	**32%**	
SEKy C&TC:04	Whitesburg Center	3,292,000	556,000	17%	2. Remodeling A
SEKy C&TC:04	Belinda Mason Building Whitesburg Campus	4,141,000	0	0%	1. Satisfactory
SEKy C&TC:04 Total	**2 asset(s)**	**7,433,000**	**556,000**	**7%**	
SEKy C&TC:06	Science And Tech Bldg. Middlesboro Campus	6,743,000	476,000	7%	2. Remodeling A
SEKy C&TC:06	Administration Building , Harlan Campus	3,314,000	219,000	7%	2. Remodeling A
SEKy C&TC:06	Liberal Arts Building Middlesboro Campus	2,757,000	155,000	6%	2. Remodeling A
SEKy C&TC:06 Total	**3 asset(s)**	**12,814,000**	**850,000**	**7%**	
Somerset CC:02	Transport & Mfg Bldg	9,715,000	3,780,000	39%	3. Remodeling B
Somerset CC:02	Academic Bldg	3,323,000	1,050,000	32%	3. Remodeling B
Somerset CC:02	Administration Bldg	729,000	182,000	25%	1. Satisfactory
Somerset CC:02	Diesel Bldg	818,000	147,000	18%	1. Satisfactory
Somerset CC:02	Student Center	527,000	92,000	17%	1. Satisfactory
Somerset CC:02 Total	**5 asset(s)**	**15,112,000**	**5,251,000**	**35%**	
Somerset CC:05	Mccreary Ctr Somr Cc	4,709,000	722,000	15%	2. Remodeling A
Somerset CC:05 Total	**1 asset(s)**	**4,709,000**	**722,000**	**15%**	
Somerset CC:06	Laurel South Main Building	11,040,000	5,832,000	53%	4. Remodeling C
Somerset CC:06	Meece Hall	6,674,000	3,128,000	47%	3. Remodeling B
Somerset CC:06	Stoner Hall	4,748,000	1,631,000	34%	3. Remodeling B
Somerset CC:06	Laurel Campus North, Laurel Center	3,194,000	1,088,000	34%	3. Remodeling B
Somerset CC:06	H.D. Strunk Learning Center	3,070,000	1,270,000	41%	3. Remodeling B
Somerset CC:06	Cooper Hall	3,421,000	844,000	25%	2. Remodeling A
Somerset CC:06	Laurel Campus North, Serpec	4,210,000	113,000	3%	2. Remodeling A
Somerset CC:06	A E Blakley A/T Bldg	11,086,000	543,000	5%	2. Remodeling A
Somerset CC:06	H Rogers Student Commons	11,089,000	530,000	5%	2. Remodeling A
Somerset CC:06	Clinton Center	7,296,000	0	0%	1. Satisfactory
Somerset CC:06	Clinton Center Storage	156,000	0	0%	1. Satisfactory
Somerset CC:06 Total	**11 asset(s)**	**65,984,000**	**14,979,000**	**23%**	
WKyC&TC:Paducah	Anderson Technical Building	31,867,000	12,364,000	39%	3. Remodeling B

Table 4.4B: Kentucky Community & Technical College System Facilites, Ranked by 5-Year FCI
Assets grouped by KCTCS institution and campus

Institution: Campus	Asset Name	Asset Replacement Value	5YR FCI Cost	5YR FCI ↓	5-YR Building Condition Code
WKyC&TC:Paducah	Matheson Learning Center	7,945,000	2,654,000	33%	3. Remodeling B
WKyC&TC:Paducah	Student Center / Fine Arts	9,500,000	4,335,000	46%	3. Remodeling B
WKyC&TC:Paducah	Haws Gymnasium	5,148,000	2,096,000	41%	3. Remodeling B
WKyC&TC:Paducah	Allied Health Building	11,521,000	3,373,000	29%	3. Remodeling B
WKyC&TC:Paducah	Waller Hall	5,926,000	2,617,000	44%	3. Remodeling B
WKyC&TC:Paducah	Carson Hall	3,323,000	1,726,000	52%	4. Remodeling C
WKyC&TC:Paducah	Rosenthal Hall	5,123,000	1,913,000	37%	3. Remodeling B
WKyC&TC:Paducah	Crounse Hall	18,142,000	890,000	5%	2. Remodeling A
WKyC&TC:Paducah	Purchase Training Center	1,949,000	357,000	18%	2. Remodeling A
WKyC&TC:Paducah	Nemer Building	1,918,000	340,000	18%	2. Remodeling A
WKyC&TC:Paducah	Carriage House	471,000	229,000	49%	3. Remodeling B
WKyC&TC:Paducah	M & O Bldg.	212,000	132,000	62%	4. Remodeling C
WKyC&TC:Paducah	Mechanical Room	764,000	656,000	86%	4. Remodeling C
WKyC&TC:Paducah Total	**14 asset(s)**	**103,809,000**	**33,682,000**	**32%**	
KCTCS Grand Total	**233 asset(s)**	**1,277,379,000**	**386,776,000**	**30%**	

> $10 million
> $1 million

Table 4.5: KCTCS Building Systems Ranked by 2007 Dollar Value Renewal Needs

(for all campuses in KCTC Systemwide, figures in millions of dollars)

SYSTEM NAME	2007 + backlog ↓	2008	2009	2010	2011	5-YR TOTAL	15-YR TOTAL
Distribution Systems	55.226	3.317	2.877	0.957	2.739	65.116	90.054
Communications and Security	29.764	3.385	2.604	0.554	4.066	40.373	101.428
Equipment and Furnishings	21.355	4.471	1.754	1.223	6.460	35.262	62.882
Exterior Windows	17.704	1.570	3.059	0.988	1.747	25.069	46.708
Electrical Service and Distribution	17.636	0.923	6.582	0.150	2.830	28.122	34.774
Floor Finishes	16.299	2.214	0.809	1.113	3.939	24.375	51.792
Wall Finishes	13.595	0.780	0.676	1.847	7.819	24.717	66.586
Ceiling Finishes	12.974	1.359	0.829	0.997	2.273	18.432	39.293
Lighting and Branch Wiring	10.311	1.642	0.765	0.150	1.990	14.856	21.320
Controls and Instrumentation	9.713	0.227	0.278	0.068	0.578	10.863	17.225
Exterior Doors	8.578	0.690	1.061	0.075	2.615	13.019	17.991
Plumbing Fixtures	7.964	0.701	2.867	0.203	1.464	13.198	17.991
Roofing	7.220	0.436	0.408	0.389	1.768	10.220	20.776
Cooling Generating Systems	6.428	1.218	0.000	0.862	1.493	10.001	19.600
Domestic Water Distribution	6.011	0.304	1.380	0.004	0.826	8.526	12.206
Heat Generating Systems	5.759	0.000	1.927	0.292	0.702	8.680	13.435
Terminal and Package Units	2.913	0.660	0.975	0.106	1.427	6.081	11.491
Emergency Light and Power Systems	2.858	0.338	0.260	0.262	0.496	4.214	8.471
Storm Sewer	2.850	0.000	0.000	0.000	0.000	2.850	2.850
Fittings	2.709	0.435	0.336	0.436	2.713	6.630	10.747
Sanitary Sewer	2.609	0.000	0.000	0.000	0.000	2.609	2.699
Partitions	2.407	0.041	0.000	1.078	0.523	4.049	21.553
Conveying	1.767	0.265	0.000	0.131	0.252	2.415	4.809
Fire Protection	1.540	0.171	0.161	0.148	0.003	2.022	6.947
Electrical Distribution	0.882	0.000	0.000	0.000	0.000	0.882	1.323
Plumbing	0.847	0.000	0.001	0.987	0.356	2.191	10.642
Interior Doors	0.525	0.074	0.000	0.126	0.317	1.043	5.715
Exterior Walls	0.362	0.000	0.052	0.000	0.076	0.491	0.858
Movable Furnishings	0.202	0.000	0.000	0.000	0.000	0.202	0.202
Boilers	0.177	0.000	0.000	0.000	0.000	0.177	0.354
Water Supply	0.165	0.000	0.000	0.000	0.000	0.165	0.165
Superstructure	0.162	0.000	0.000	0.005	0.055	0.222	0.265
Stairs	0.098	0.003	0.000	0.008	0.016	0.125	0.345
Substructure	0.055	0.000	0.001	0.001	0.011	0.067	0.086
Exterior Steps	0.000	0.000	0.000	0.002	0.000	0.002	0.035
Fixed Partitions	0.000	0.000	0.000	0.000	0.000	0.000	0.065
Other Plumbing Systems	0.000	0.000	0.112	0.000	0.000	0.112	0.401
Grounding Systems	0.000	0.000	0.000	0.000	0.000	0.000	0.131
Balcony Walls and Handrails	0.000	0.000	0.000	0.000	0.076	0.076	0.076
Special Construction and Demolition	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Table 4.5: KCTCS Building Systems Ranked by 2007 Dollar Value Renewal Needs
(for all campuses in KCTC Systemwide, figures in millions of dollars)

SYSTEM NAME	2007 + backlog ↓	2008	2009	2010	2011	5-YR TOTAL	15-YR TOTAL
Exterior Stairs and Fire Escapes	0.000	0.000	0.000	0.000	0.000	0.000	0.020
Glazed Roof Openings	0.000	0.000	0.000	0.000	0.000	0.000	0.034
Spiral Stairs	0.000	0.000	0.000	0.014	0.007	0.021	0.021
Ramps	0.000	0.013	0.000	0.000	0.000	0.013	0.096
Site Communications and Security	0.000	0.000	0.269	0.135	0.000	0.404	0.697
Other Ceilings	0.000	0.000	0.000	0.000	0.000	0.000	0.080
Flooring	0.000	0.000	0.000	0.000	0.000	0.000	0.013
Chilled Water Systems	0.000	0.000	0.000	0.000	0.000	0.000	0.148
HVAC	0.000	0.000	0.000	0.000	0.019	0.019	0.019
Totals	**269.665**	**25.239**	**30.044**	**13.307**	**49.655**	**387.911**	**725.419**

Section 5. Space Study
Evaluation of Adequacy and Fit for Continued Use

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OVERVIEW

Paulien & Associates, Inc. as part of the VFA team, reviewed selected buildings for educational adequacy and fit for continued use as well as reviewed and applied the KCPE Space Needs Model. The details of this process and methodology are included in the overall KCPE study.

The buildings included in the educational adequacy and fit for continued use study were selected by Council staff and the institution representatives. The outcome of this portion of the overall analyses does not represent an institutional summary – only the outcome for the buildings assessed.

2020 Projections

	Fall 2004	2020	Percent Increase
Student FTE	50,447	71,277	41%
Faculty/Staff FTE requiring Office Space	4,719	6,668	41%

The student enrollment, faculty and staff, and research expenditure projections were provided by the Council for use in this study. The only space intended to be included in the Space Needs Model is Educational and General (E&G) space. Therefore all of the assignable square footage (asf) from a particular building may not be included. The Council provided a dataset of the spaces to be included in the model. It was the consultants' understanding that the non E&G spaces were removed. However at individual institutions parking garages, barns, and farm spaces were included. Where possible, the consultants excluded these spaces. Council staff was informed of these anomalies, and agreed that these adjustments should be made.

FIT FOR CONTINUED USE

The KCTCS administration decided to base the evaluation of adequacy and fit for continued use on a selection of campuses that would show the consultants what they viewed as a typical Eastern Kentucky campus, a typical Western Kentucky campus and an urban campus. Two of these have separate locations for the former community college and the former technical college and one, Elizabethtown, had the two adjoining each other on what can now be viewed as one campus.

The KCTCS administration asked the consultants to meet with the Presidential Leadership Team during one of their meetings at KCTCS headquarters. This allowed the consultants to hear comments and solicit input from other presidents. It appears that the issues identified at the sample institutions apply across the system relating to buildings that are in need of major updating, additional consolidation between separated sites, and the re-use of spaces vacated through the development of a single set of facilities for those programs that had been offered at both community colleges and technical colleges.

The consultants saw examples where KCTCS institutions are making significant effort to continue to upgrade their laboratory equipment through specialized federal funds and other operating side revenues. This seems an important challenge for KCTCS to assure that their laboratories continue to reflect the type of equipment that students will be expected to operate in the work force.

Elizabethtown Community and Technical College

The Elizabethtown campus had good quality facilities, certainly the best the consultants saw within KCTCS. The Science building in many ways is a model for lower division science, having adopted many of the currently espoused principles in planning such buildings. It is a building built almost 40 years ago but which had a major renovation within the last five years. The Technical College facility is well maintained and the campus has made an effective effort to update equipment and machinery in most of the labs. This is an ongoing issue for all the KCTCS campuses and the use of a mix of federal dollars and operating funds is critical to maintaining this. There are stairs from the main hallway to the shop floor in some of the shops. The work-around for handicapped persons is to go around the outside of the building and enter through the wall which has the big double doors which is at grade from the service yard, which is not in full ADA compliance. The hallways are well lit in this building. The building is very large and relatively confusing for a first-time visitor there is a logic to the way the building is divided and the rooms numbered that becomes clear once a person has some familiarity with it.

Hazard Community and Technical College

This campus is split with significant distance between the former Community College and the former Technical College. The consultants assessed the Jolly Classroom Center-East, which is 35 years old but has had fairly significant renovations. A major issue is determining who will take some space that has been vacated recently. It appears that space would work well for any office-based function and for dry classrooms or small computer labs. The classrooms do not have the multi-media technology that we would expect to see in current classroom settings. The science labs appear to be in need of significant educational renovation. The Jolly Classroom Center-East is connected to other portions of the Jolly Center which include additional administrative offices, library and other elements. The mechanical and electrical seem to be in good condition. Some plumbing restoration with fixture updates would be desirable. Re-glazing would be desirable. There are a few ADA requirements that need fine-tuning.

The facilities on the Technical College campus were in poorer condition. The Business and Office Building no longer serves the academic programs in those areas. It does have some campus offices, Health Professions labs and a student services/dining area in the basement. This building needs a major renovation. All of the systems, glazing and ADA requirements need to be addressed. The only ADA access to the building is to the lower level. This seems far from ideal. The Health labs have not had adequate retrofits and are in need of better designed space and up to date equipment. Building case work is generally in poor condition. There have been some attempts to upgrade some areas including a stucco area with a water feature near one of the office areas. The Hazard Industrial Education building needs significant programmatic updates. The technology areas reflect the time period when the building was constructed 45 years ago. They are in need of significant upgrades. There appeared to be a ventilation problem in the welding area. While the ventilation system was renovated in the mid 1990's and a recent evaluation by a mechanical engineer noted some deficiencies, the consultants call some attention to it because any excess gas in the space could be a life safety issue. The Cosmetology area has had some attention but appears to need an electrical upgrade. Many of the academic programs in this building have facilities that would not seem to meet current employer expectations. The building appears to be structurally sound and there is not a technical reason to recommend its demolition and replacement. The consultants, however, noted that the quality of buildings on the Technical campus site is significantly inferior to what was seen on the community college site and raised the point as to whether the Hazard community might be better served by these two functions becoming physically co-located in the future.

The consultants also suggest that when functions for which the building was named no longer exist in a building, it would appear desirable to either rename the building after current functions or to honor someone whether a donor (which is the new norm) or a person who contributed significantly to the institution (which is the old norm).

Jefferson Community and Technical College

Jefferson Community College started with a former seminary building that was not put on the assessment list. It is a building that is a very strong castle-like architectural statement but has problems that need

attention in several parts of the building. The building that the consultants were asked to assess was the Hartford building which has 12 stories plus basement and was the first building constructed by JCC. It is directly adjacent to the elevated freeway as is the former seminary building. The Hartford building was designed to turn its back to the freeway with all fenestration facing away from the freeway. The Hartford building has significant problems. The footprint is such that the space per floor averages less than 5,000 assignable square feet per floor, minimizing flexibility. There is a serious safety issue in that the glass in the upper floors breathes quite extensively. There is a concern that panes might fall. The campus should do an intermediate fix of putting some cross rails that would prevent individuals from leaning against the glass and possibly being part of a serious accident. The consultants saw examples of such cross bracing at the University of Kentucky Robotics Building. [Subsequent to the on-site evaluation, KCTCS officials noted that rails had been installed and were there at the time of the assessment. The consultants did not see the rails on the floors assessed.] The high ceiling lobby of the Hartford Building is now being used as a study area. This appears to be a good use for that space and could benefit from some additional decorating elements. There are some issues with the wiring. JCTC has replaced aluminum wiring in most of the floor-to-floor feeds but the main feed is still aluminum and needs to be replaced. Laboratory spaces in this building generally did not seem up to date. A major upgrade would be desirable. The campus is building a business and allied health facility that will be relatively close to the Hartford building. Following its occupancy (those programs are coming primarily from the Technical College buildings) JCTC should look at attempting a significant floor-by-floor renovation of the Hartford building. Some very low to the ground classroom chairs are used in fifth floor classrooms. These appear to be chairs that were intended not for college age students but for elementary or middle school students. There is a half circle auditorium in the basement. They cannot close the wall that was originally intended to divide it into pie-shaped pieces. The total seating area is over 180 degrees making site lines impossible. This room needs a major re-working and if it is to be continued to be used as a large classroom needs significant technology that would allow multiple screens to provide adequate viewing angles for all of the individuals.

Technology Building A – Some of this building will be vacated when Licensed Practical Nursing, Surgical Technology, Medical Billing, and Medical Assisting moves to the new building on what had been the Community College site. The Culinary Arts program also closed down creating additional unused space. This leaves the building with a lower activity sense that is far from ideal. The campus has leased out space to organizations such as YouthBuild Louisville which if that is viewed as an ongoing use should be designated as a non-institutional agency. The YouthBuild space appears to be part of the current inventory which results in space being shown with no need generated since individuals employed by YouthBuild Louisville will not be institutional employees. This could be an issue that should be checked throughout the KCTCS inventory.

Technology Campus Building B – There is a small library room which is quite nice. The Student Services area is very tight. The consultants observed a rather heated financial aid discussion with a student in the narrow hallway talker through a counter opening to a staff member who was explaining why the student had not received a check. Since significant space is being vacated it would highly desirable to rework the Student Services so they are not so cramped and that these functions can take place in a less public environment. The consultants saw a mix of new and older equipment in the technology labs. Ford Motor Company recently pulled their specialty tools with their removal of the Ford Asset Program as part of Ford's retrenchment activities. Since Louisville had always been a major Ford assembly location, this has been viewed as a significant blow. The Cosmetology lab is open to the public on Thursday nights. Access for the public is not ideal. It is confusing to find the Cosmetology area. This lab could also stand some upgrades. There were a number of other issues in the Graphic Arts area there were some new printers but the chalktalk area was on a mezzanine level that would not have access for a handicapped person. The round utility sinks in the shops are leaking and they are quite expensive to replace but need to be replaced.

The move of the Health Professions will create some opportunities for making adjustments. Parts of these buildings are overcrowded while other areas seem under utilized. The Jefferson consolidation of programs illustrates an issue happening throughout the consolidated KCTCS institutions where areas of overlap are being brought into a single location resulting in the need for enhanced facilities at that location and the

vacating of facilities at the location no longer offering that service. This will have an impact on capital costs needed by KCTCS.

Summary of Evaluation of Adequacy and Fit for Continued Use Outcomes

Building Name / No.	ASF in Space Model	Building Age	Rating	Recommended Action	Gross Sq. Ft.
Elizabethtown Community and Technical College					
E-Town TC • 0651	88,058	40	3.1	Minor Renovation	110,309
Science Building • 0605	18,813	37	3.4	Minor Renovation	33,700
Total ASF	**106,871**	**Total ASF in Space Model:**	240,066		**144,009**
No. of Buildings Assessed: 2		***Total ASF as a Percent of Total ASF in Space Model:***	*45%*		
Average		39	3.3	***Most Recommended Action:*** *Minor Renovation*	
Hazard Community and Technical College					
Business & Office • 0772	10,912	35	2.1	Major Renovation	18,308
Hazard Ind Ed • 0771	34,203	45	1.9	Major Renovation	53,371
Jolly Clrm Ctr-East • 0700	26,240	36	2.4	Minor Renovation	41,819
Total ASF	**71,355**	**Total ASF in Space Model:**	316,686		**113,498**
No. of Buildings Assessed: 3		***Total ASF as a Percent of Total ASF in Space Model:***	*23%*		
Average		39	2.1	***Most Recommended Action:*** *Major Renovation*	
Jefferson Community and Technical College					
Hartford Building • 1002	49,151	35	1.5	Major Renovation	104,167
Jeff TC Bldg A • 1071	30,745	30	2.5	Minor Renovation	56,263
Jeff TC Bldg B • 1072	69,185	30	2.9	Minor Renovation	91,876
Total ASF	**149,081**	**Total ASF in Space Model:**	451,330		**252,306**
No. of Buildings Assessed: 3		***Total ASF as a Percent of Total ASF in Space Model:***	*33%*		
Average		32	2.3	***Most Recommended Action:*** *Minor Renovation*	
Total ASF	**327,307**	**Total ASF in Space Model:**	1,008,082		**509,813**
No. of Buildings Assessed: 8		***Total ASF as a Percent of Total ASF in Space Model:***	*32%*		
Average		**36**	**2.5**	***Most Recommended Action:*** *Minor Renovation*	

Rating Scale: Unsatisfactory = 1; Somewhat Unsatisfactory = 2; Somewhat Satisfactory = 3; Very Satisfactory = 4

Estimated Renovation Costs

Building Name / No.	Gross Sq. Ft.	Renovation Type	Renovation Costs
Elizabethtown Community and Technical College			
E-Town TC • 0651	110,309	Category 2, Minor	$5,515,450
Science Building • 0605	33,700	Category 2, Minor	$1,685,000
Total GSF Assessed	**144,009**		**$7,200,450**
No. of Buildings Assessed: 2			
Hazard Community and Technical College			
Business & Office • 0772	18,308	Category 4, Major	$2,746,200
Hazard Ind Ed • 0771	53,371	Category 4, Major	$8,005,650
Jolly Clrm Ctr-East • 0700	41,819	Category 2, Minor	$2,090,950
Total GSF Assessed	**113,498**		**$12,842,800**
No. of Buildings Assessed: 3			
Jefferson Community and Technical College			
Hartford Building • 1002	104,167	Category 4, Major	$15,625,050
Jeff TC Bldg A • 1071	56,263	Category 2, Minor	$2,813,150
Jeff TC Bldg B • 1072	91,876	Category 2, Minor	$4,593,800
Total GSF Assessed	**252,306**		**$23,032,000**
No. of Buildings Assessed: 3			
Total GSF Assessed	**509,813**		**$43,075,250**
No. of Buildings Assessed: 8			

Renovation Costs per GSF: Category 1, Minor - $25; Category 2, Minor - $50; Category 3, Major - $75; Category 4, Major - $150; Demolition - $20 or $30

SPACE NEEDS MODEL

As a system, KCTCS shows a ten percent (10%) space deficit of 418,500 ASF when the space model is applied for Fall 2004. The major deficits are in special use and support space (293,000 ASF) and open laboratories (230,000 ASF) and teaching laboratory space (53,500 ASF). Bluegrass Community and Technical College has the largest deficit at about 265,000 ASF followed by Jefferson Community and Technical College with a 226,000 ASF deficit. Other institutions with more modest deficits include Hopkinsville (57,000 ASF), Owensboro (47,000 ASF), West Kentucky and Elizabethtown (both at approximately 40,000 ASF).

Applying the 2020 projections shows that KCTCS will have a 53% deficit of 2.2 million ASF with every space category having substantial need. With the exception of Bowling Green Technical College, all of the colleges show a need for additional space.

Space Needs Model Application

		Fall 2004 *Student FTE = 50,447 Staffing FTE = 4,719*			2020 *Student FTE = 71,277 Staffing FTE = 6,668*		
Space Category	**Existing ASF**	**Guideline ASF**	**Surplus/ (Deficit)**	**Percent Surplus/ (Deficit)**	**Guideline ASF**	**Surplus/ (Deficit)**	**Percent Surplus/ (Deficit)**
Classrooms & Service *15 ASF/Student FTE*	875,234	756,705	118,529	14%	1,069,155	(193,921)	(22%)
Teaching Laboratories *30 ASF/Student FTE*	1,459,971	1,513,410	(53,439)	(4%)	2,138,310	(678,339)	(46%)
Open Laboratories *7 ASF/Student FTE*	123,110	353,129	(230,019)	(187%)	498,939	(375,829)	(305%)
Research Laboratories *No Standard*	10,017	10,017	0	0%	10,017	0	0%
Office Suites *170 ASF/Staff FTE*	792,035	802,230	(10,195)	(1%)	1,133,560	(341,525)	(43%)
Library *No Standard*	228,407	228,407	0	0%	228,407	0	0%
Physical Education & Recreation *No Standard*	19,250	19,250	0	0%	19,250	0	0%
Special Use & General Use Space *12 ASF/Student FTE*	312,120	605,364	(293,244)	(94%)	855,324	(543,204)	(174%)
Support Space *4 ASF/Student FTE*	251,707	201,788	49,919	20%	285,108	(33,401)	(13%)
TOTAL	**4,071,851**	**4,490,300**	**(418,449)**	**(10%)**	**6,238,070**	**(2,166,219)**	**(53%)**

ASF = Assignable Square Feet

Space Needs Model Summary

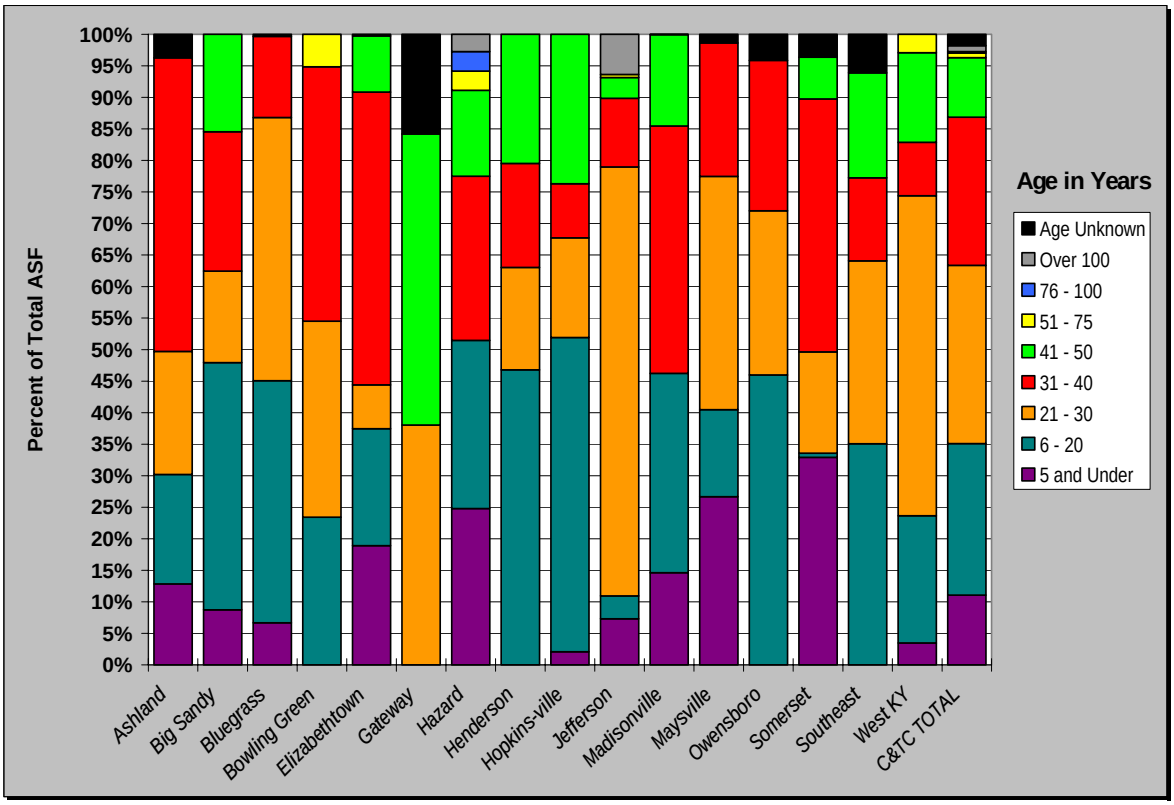
Institution	Existing ASF	Fall 2004 Guideline ASF	Fall 2004 Surplus/ (Deficit)	Fall 2004 Percent Surplus/ (Deficit)	2020 Guideline ASF	2020 Surplus/ (Deficit)	2020 Percent Surplus/ (Deficit)
Ashland Community and Technical College	250,594	225,617	24,977	10%	311,059	(60,465)	(24%)
Big Sandy Community and Technical College	332,669	269,508	63,161	19%	373,446	(40,777)	(12%)
Bluegrass Community and Technical College	451,201	716,548	(265,347)	(59%)	1,004,460	(553,259)	(123%)
Bowling Green Technical College	178,683	111,866	66,817	37%	156,304	22,379	13%
Elizabethtown Community and Technical College	240,066	278,833	(38,767)	(16%)	389,333	(149,267)	(62%)
Gateway Community and Technical College	143,145	123,459	19,686	14%	173,677	(30,532)	(21%)
Hazard Community and Technical College	316,686	252,367	64,319	20%	344,983	(28,297)	(9%)
Henderson Community College	97,924	106,543	(8,619)	(9%)	145,643	(47,719)	(49%)
Hopkinsville Community College	120,568	177,342	(56,774)	(47%)	244,798	(124,230)	(103%)
Jefferson Community and Technical College	451,330	677,078	(225,748)	(50%)	942,108	(490,778)	(109%)
Madisonville Community College	203,712	212,574	(8,862)	(4%)	295,466	(91,754)	(45%)
Maysville Community College	161,016	149,464	11,552	7%	208,352	(47,336)	(29%)
Owensboro Community and Technical College	212,660	259,499	(46,839)	(22%)	358,371	(145,711)	(69%)
Somerset Community College	355,698	341,717	13,981	4%	475,371	(119,673)	(34%)
Southeast Kentucky Community and Technical College	261,096	253,011	8,085	3%	351,169	(90,073)	(34%)
West Kentucky Community and Technical College	294,803	334,874	(40,071)	(14%)	463,530	(168,727)	(57%)
TOTAL	**4,071,851**	**4,490,300**	**(418,449)**	**(10%)**	**6,238,070**	**(2,166,219)**	**(53%)**

ASF = Assignable Square Feet

EXISTING E&G SPACE USED IN THE SPACE NEEDS MODEL

Age of Existing E&G Facilities

Approximately 35% of KCTCS' space is less than 20 years old. More than 50% of its space is between 20 and 40 years old and less than 15% of its space is older than 40 years. Gateway appears to have some the oldest facilities of the system with slightly more than 60% of its space being older than 40 years. It is also the only institution that does not have any space younger than 20 years old. Somerset, Maysville, Hazard, and Elizabethtown have a larger portion of their facilities that are five (5) years and younger.



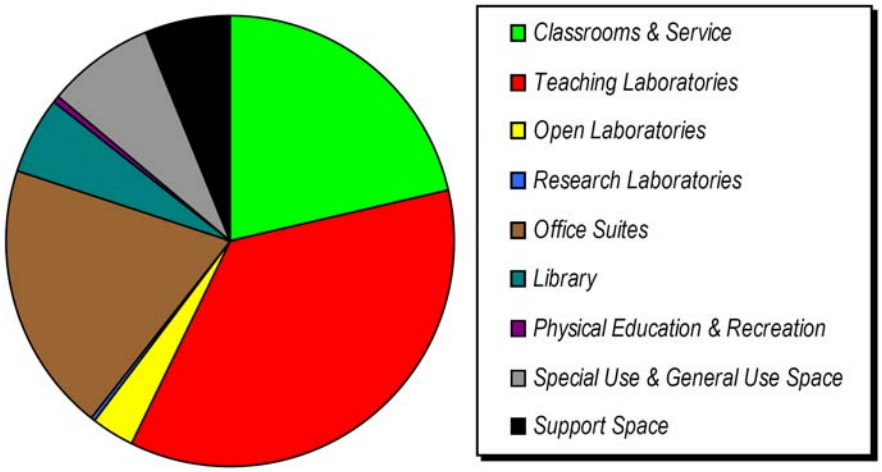
Average Assignable Square Footage per Student FTE

KCTCS averages 81 ASF per Student FTE (total ASF [4,071,851 ASF] divided by KCTCS total Student FTE [50,447 Student FTE]). The Colleges' averages range from 52 to 143 ASF per Student FTE with a college average of 91 ASF per Student FTE. The colleges with the lowest square footage per student include Bluegrass at 52 ASF per Student FTE, Jefferson at 59 ASF, Hopkinsville at 61 ASF, and Elizabethtown at 75 ASF per Student FTE. Bowling Green has the most space per student at 143 ASF per Student FTE followed by Hazard at 126 ASF per Student FTE.

	Existing E&G Facilities		Institution Averages	
Space Category	ASF per Student FTE	% of Total	Average ASF per Student FTE	Range of ASF
Classrooms & Service	17	21%	19	*9 - 37*
Teaching Laboratories	29	36%	33	*13 - 66*
Open Laboratories	2	3%	3	*.48 - 8*
Research Laboratories	0	0%	1	*.04 - 2*
Office Suites	16	19%	17	*13 - 26*
Library	5	6%	5	*1 - 10*
Physical Education & Recreation	0	0%	1	*.24 - 3*
Special Use & General Use Space	6	8%	8	*.41 - 25*
Support Space	5	6%	6	*2 - 19*
TOTAL	**81**	**100%**	**91**	**52 - 143**

Distribution of Existing E&G Space by Space Category

Thirty-six percent (36%) of KCTCS' space is teaching laboratory space. For some of the institutions, teaching laboratories are as much as 46% of their E&G space. Classroom space consists of 21% followed by office space at 19% of the total E&G space.



NOTE: The percentages are found in the "Percent of Total" column in the table above.

Section 6: 15 Year Capital Plan

The 15-year Capital Plan presented in this section incorporates all three portions of the study – condition, space adequacy & space capacity. Condition and space funding needs are presented separately first, and then aggregated together to show the total funding needed for the university facilities included in the study. In addition, two views of the spending pattern are shown:

Table 6.1: KCTCS 15-year Actual Capital Needs

Data supports Figures 6.2 through 6.4. Note: In 2007 dollars, Inflation factor set to 0%.

Funding Year	Condition Needs	Space - Adequacy	Space - Current Capacity	Space - Future Capacity	Total Funding
2007	$ 269,665,000	$ 43,075,000	$ 438,412,000	$ -	$ 751,152,000
2008	25,239,000	-	-	-	25,239,000
2009	30,044,000	-	-	-	30,044,000
2010	13,307,000	-	-	-	13,307,000
2011	49,922,000	-	-	-	49,922,000
2012	20,558,000	-	-	58,637,000	79,195,000
2013	25,716,000	-	-	61,569,000	87,285,000
2014	22,960,000	-	-	64,501,000	87,461,000
2015	18,589,000	-	-	67,432,000	86,021,000
2016	79,818,000	-	-	70,364,000	150,182,000
2017	21,726,000	-	-	73,296,000	95,022,000
2018	27,720,000	-	-	76,228,000	103,948,000
2019	36,420,000	-	-	79,160,000	115,580,000
2020	15,709,000	-	-	82,092,000	97,801,000
2021	68,027,000	-	-	85,023,000	153,050,000
Total	$ 725,420,000	$ 43,075,000	$ 438,412,000	$ 718,302,000	$ 1,925,209,000

ENDING FCI = 0%

- **Actual** – with spending assumed to vary to meet the annual dollar amount predicted by the forecasts each year;
- **Strategic** – with spending aligned to meet strategic goals recommended by the consultants for each five year period of the 15-year plan. The strategic goals and timeframes can be adjusted to match priorities set by the Council and the institutions.

Actual Needs

The "actual needs" summarized here depict the amount of capital investment estimated to be needed in each of the next fifteen years based on the consultant team's professional opinion of when each need would come due. The needs are broken out by three reasons that investment might be required: (a) to address system renewals that are driven by poor physical condition (orange for first year, red in later years), (b) to address space adequacy issues preventing a facility from being utilized in its highest and best use by current educational standards (green), and (c) to grow space capacity to meet current (light blue) and future (dark blue) enrollment projections.

Based on condition alone, Kentucky Community & Technical College System's Lifecycle Condition Assessments identified $270 million in deferred capital renewals due in or before 2007, and $388 million by 2011, creating a starting 5-Year FCI of 30% (next 5-year renewal needs / current replacement value).

Spending that amount would reduce the FCI to zero and bring all assessed facilities into excellent condition. Maintaining an FCI level = 0% forecasts needing an additional $337 million in capital renewals over the following 10 years, for a 15-year total capital renewal need of $725 million. (Note: All in 2007 dollars; Inflation factor = 0%.)

If KCTCS funded the capital renewals in the exact years each renewal is forecast to be due, the investment pattern would look like Figure 6.2.

The Space Study identified $43 million needed to make selected buildings fit-for-continued-use, plus $438 million needed for E&G buildings to meet current enrollment capacity, and $718 million needed for E&G buildings to meet the 2020 enrollment projections. Figure 6.3 shows capital investments based on space needs, including investment in future capacity starting in the second 5-year period, and growing modestly over the following 10 years until all space capacity needs are met by 2021.

When aggregated together, the condition + space needs of the University look like the spend pattern shown in Figure 6.4, totaling $1.93 billion (in 2007 dollars, inflation = 0%).

Figure 6.2: Kentucky Community and Technical Colleges
15 Year Facilities Capital Plan
Actual Renewal Costs for Assessed Facilities

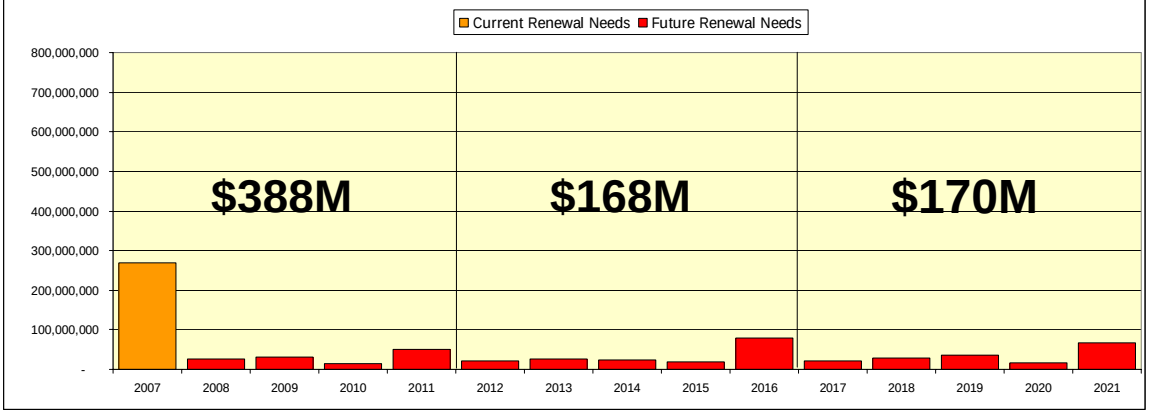


Figure 6.3: Kentucky Community and Technical Colleges
15 Year Facilities Capital Plan
Actual Space Needs

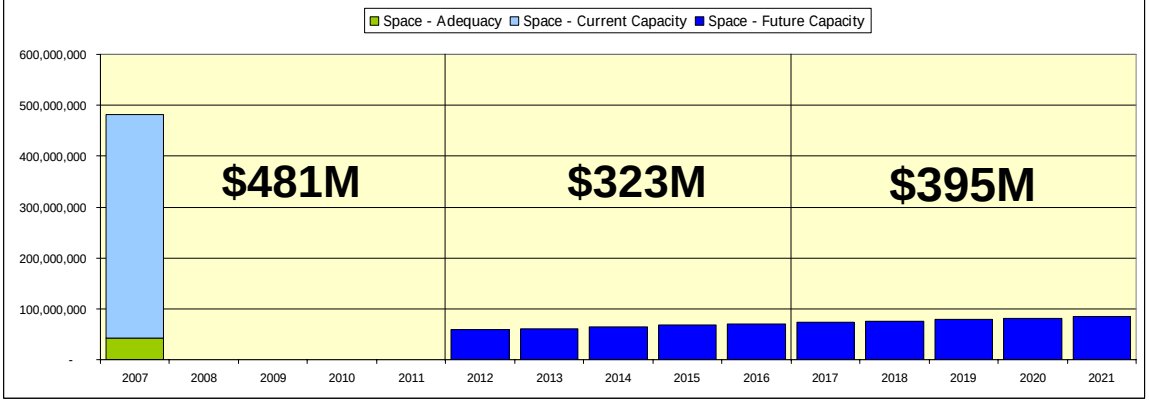
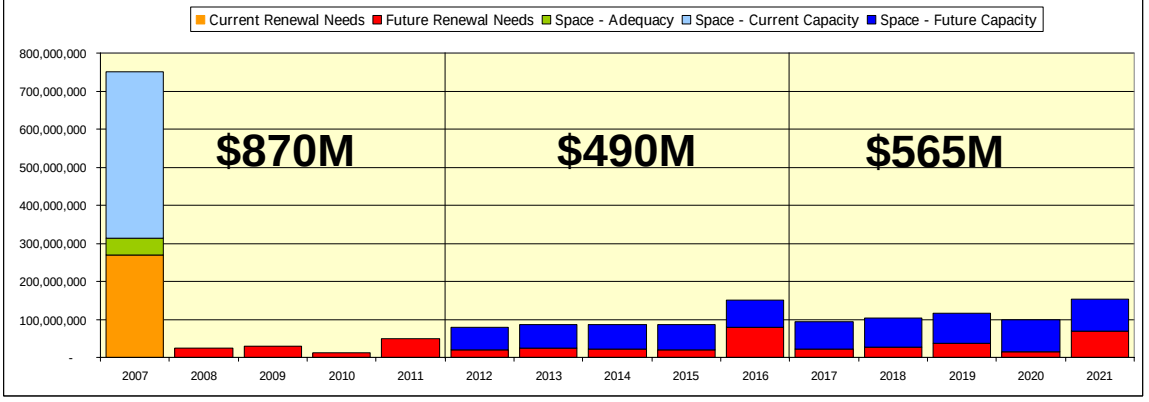


Figure 6.4: Kentucky Community and Technical Colleges
15 Year Facilities Capital Plan
Blended Space + Renewal Costs



Funding to Meet Strategic Goals

The consultants' team believes the spending pattern depicted in Figure 6.4 to be difficult to achieve – it is unlikely KPES and the institutions could mobilize the financial, facility planning and project management resources necessary to make such a high level of investment in year 1 of a 15 year plan.

Table 6.5: KCTCS 15-year Strategic Capital Investments

Data supports Figures 6.6 through 6.8. Note: In 2007 dollars, Inflation factor set to 0%.

Funding Year	Condition Needs	Space - Adequacy	Space - Current Capacity	Space - Future Capacity	Total Funding
2007	$ 94,440,000	$ 8,615,000	$ -	$ -	$ 103,055,000
2008	(5,120,000)	8,615,000	101,956,000	-	105,451,000
2009	(7,821,000)	8,615,000	107,054,000	-	107,848,000
2010	(10,522,000)	8,615,000	112,152,000	-	110,245,000
2011	(13,223,000)	8,615,000	117,250,000	-	112,642,000
2012	56,401,000	-	-	58,637,000	115,038,000
2013	55,866,000	-	-	61,569,000	117,435,000
2014	55,331,000	-	-	64,501,000	119,832,000
2015	54,796,000	-	-	67,432,000	122,228,000
2016	54,260,000	-	-	70,364,000	124,624,000
2017	53,725,000	-	-	73,296,000	127,021,000
2018	53,190,000	-	-	76,228,000	129,418,000
2019	52,655,000	-	-	79,160,000	131,815,000
2020	52,120,000	-	-	82,092,000	134,212,000
2021	51,584,000	-	-	85,023,000	136,607,000
	$ 597,682,000	$ 43,075,000	$ 438,412,000	$ 718,302,000	$ 1,797,471,000

ENDING 1-Year FCI = 10%

Further, while the 2007 backlog of deferred capital renewals, space adequacy and space capacity needs are real today, the dates for future renewals and capacity investments are only forecasts – the exact year each is required can be adjusted if aligned with careful maintenance practices and space use assignments. Thus, spreading the investment out is a reasonable, and practical, goal.

To best manage the capital investment, KCTCS should establish some high level programmatic goals for capital investments. The goals should represent a 'blended' approach to address all three causes for facilities investments: condition, adequacy and capacity. The consultants propose the following strategic capital funding goals:

1. **Fit-for-Use in 5 Years:**
   Bring all facilities up to Fit-for-Continued-Use standards within the first 5 years. (Table 6.5, green column, with spending averaged over 5 years.)

2. **All "Good" Condition within 10 Years:**
   Reduce the backlog of deferred capital renewals to 10% (all buildings in "good" condition) over the first 10 years, and maintain a 10% FCI thereafter. (Table 6.5 red column. Note this is less than "Actual Needs" shown in Table 6.1 because the investment is spread out over more years (rather than invest immediately when predicted the need with come due), and maintaining 10% FCI is a reasonable goal. (Maintaining 0% FCI is not reasonable.)

3. **Invest Regularly to Build Capacity:**
   Invest regularly to build space capacity, addressing current capacity needs over first 5 years (light blue) then, starting in year 6 (dark blue) growing with enrollment through year 15.

Table 6.8 summarizes the investment pattern required to meet the proposed strategic goals. (Note that the total spent for Condition is less than in Table 6.4, because Goal 2 allows for carrying forward 10% of the current replacement value in renewals.)

To meet the proposed strategic goals, the System's 15-year capital investment would be $1.78 billion (in 2007 dollars, inflation = 0%).

Establishing funding needs that align with priorities this way will enable KCTCS to better access various funding sources, which are frequently targeted at specific initiatives or available at more favorable terms when pooled with similarly grouped needs from multiple Kentucky public postsecondary education institutions. Section 7 includes a more detailed discussion of funding sources potentially available to KPES and KCTCS.

Figure 6.6: Kentucky Community and Technical Colleges
15 Year Facilities Capital Plan
Strategic Investment in Renewal Costs

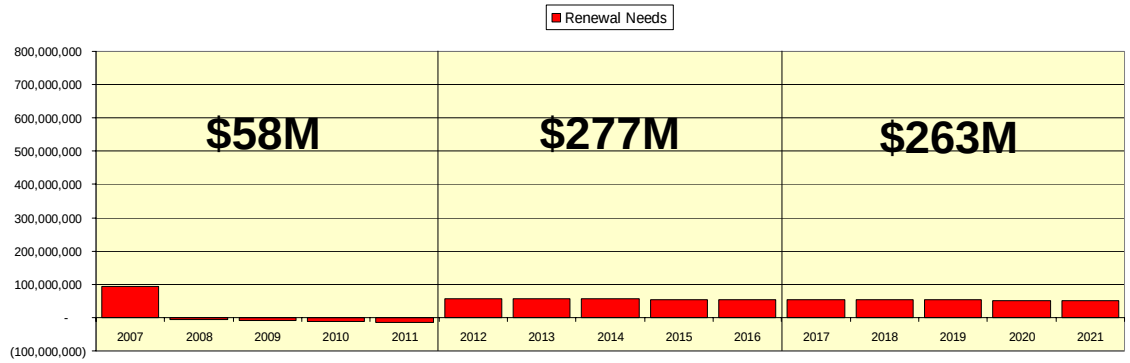


Figure 6.7: Kentucky Community and Technical Colleges
15 Year Facilities Capital Plan
Strategic Investment in Space Needs

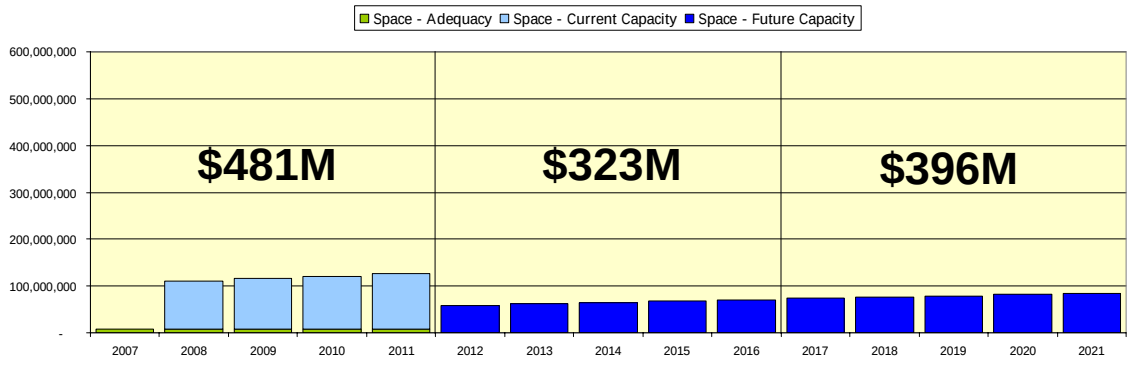
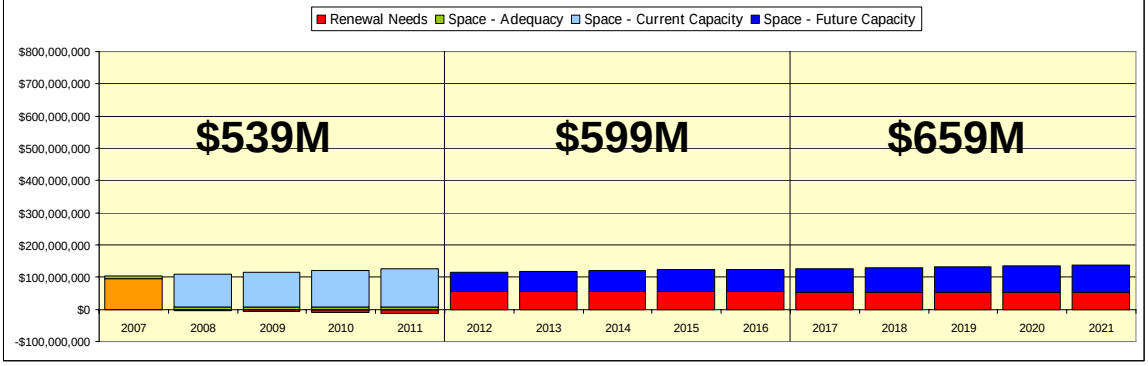


Figure 6.8: Kentucky Community and Technical Colleges
15 Year Facilities Capital Plan
Strategic Investment in Blended Space + Renewal Costs



Section 7:
Financing of Physical Facilities

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INTRODUCTION

Physical plant represents the primary asset of most institutions of higher education. Many facilities were built in response to the enrollment growth of the baby-boom generation. These buildings are now of an age where they need either replacement or considerable renovation if they are to meet current needs. In addition, programmatic additions and mission changes (such as increased emphasis on research) create needs for additional facilities even under conditions of enrollment stability. These factors, and likely others, create ongoing requirements for financial resources that can be devoted to replacement, renewal, or expansion of an institution's stock of physical assets.

This need for resources comes at a time when state governments, the primary source of capital funding for public institutions, are under considerable pressure to reduce tax burdens and/or to fund competing programs. This requires institutions to look further afield for sources of funds for capital projects. This brief white paper explores the array of alternatives and some of the financing mechanisms that are commonly employed. The paper employs a simple conceptual schema with three components:

- Potential Sources of Revenue
- Uses of Revenues
- Financing Mechanisms

The schema is shown diagrammatically in Table 7.1.

This schema reflects the realities that:

- Institutions have multiple sources that can be tapped for capital projects.
- Different sources are often aligned with different uses (the specifics in this regard will be explored later in the paper).
- There are different kinds of uses (renewal vs. new, auxiliary facilities versus general academics). Different finance mechanisms are often used with the financing of these different kinds of facilities.

Each of these dimensions will be explored in more detail in subsequent sections of this paper.

TABLE 7.1
The Dimensions of Financing Alternatives

USES	SOURCES					
	Students	State	Local Govt.	Federal Govt.	Donors	Institutional Funds
Renewal and Renovation New Construction • Auxiliaries • General Academic • Research	MECHANISMS					

THE ALTERNATIVE SOURCES OF FINANCING AND THE ASSOCIATED MECHANISMS

Colleges and universities obtain financing for facilities from a variety of sources. Chief among them are the following:

A. Students

Students have traditionally been a source of funding for certain college and university facilities, particularly those where there is a direct relationship between a funding stream and a provided service. The classic example is funding for dormitories and dining halls. In this case, room and board charges are almost always established in a way that allows the institution to repay bonds issued to pay for construction and/or to accumulate a reserve fund sufficient to pay the necessary costs of renewal and renovation.

Closely related are fees levied on all students for purposes of paying for construction of facilities. Typically such fees are used to pay for construction and renewal of facilities such as student unions and student recreation buildings. It is rare that such fees are collected for the purpose of constructing new academic buildings (and never research facilities). While the practice of using student fees to construct academic space is still not common, it is a practice that is gaining adherents. There are recent examples in which students have voted increases in fees in order to pay for badly needed campus instructional space. In the few instances to date in which students have paid for academic facilities at public institutions, the situations were unique, typically ones in which state funds were not available for a critically needed building. Student funding of a new Law School facility at the University of Colorado—needed to meet accreditation requirements at a time of state revenue declines—is a good illustration. This very nascent movement represents further recognition that students—not the state—are the dependable source of institutional revenues. This is explicitly the case regarding operating funds in the several states in which tuition revenues exceed state appropriations. With this precedent in place, there is no reason to believe that the practice will not evolve on the capital side as well.

It should be noted that funds obtained from students are acquired in ways (and at a rate) that make their use consistent with repayment of bonded indebtedness rather than up-front payment for construction or renovation.

B. State Governments

States have historically been—and continue to be—the primary provider of funds for the construction (and reconstruction) of academic buildings on college campuses. While institutions are always seeking to diversify sources of funds for capital projects, very few public institutions get to the point where states become the junior partner in such ventures. This situation is unlikely to change. Buildings are very tangible; legislators know quite precisely what they are getting when they appropriate funds for campus construction. Capital appropriations have at least two other attractive features:

1. They create (construction) jobs for blue-collar workers and thus spread the benefits across a wider swath of the citizenry.

2. They do not obligate the legislature to ongoing payments in the same way as do increases in appropriations for operating purposes. This feature explains why it is often easier to get funds for capital (one-time) expenditures than for increases in the operating budget.

The mechanisms used by states to provide funds for capital constructions vary over a relatively narrow range. On one side are states that adhere to a pay-as-you-go philosophy and appropriate funds in a lump sum to pay for construction (although the payment may be split with payment for planning being covered in one year's appropriation and actual construction in another). Other states are more prone to issue bonds to pay for campus capital projects. Some states (North Carolina, New Jersey) issue general obligation bonds that are backed by the full faith and credit of the state; the states, not the institutions, are responsible for repaying the debt. In other states, legislatures establish ground rules (and sometimes devices for pooling borrowing in the search for better rates) that let institutions borrow up to some predetermined limit. In such cases, institutions often must pledge tuition as collateral for the debt. While

the state is not directly responsible for the debt, there is recognition that, in case of institutional default, the obligation will likely end up on the legislative doorstep. With this in mind, the state's authorization to issue debt instruments is typically coupled with inclusion of repayment amounts in the operating budgets requested by, and appropriated to, the institutions.

C. Local Governments

In the main, only community colleges that have their own taxing authority have been in a position to acquire and use local tax revenues to pay for capital construction projects. The norm is a situation in which the state establishes an upper limit on the tax rate (almost always a real property mill levy) that can be imposed without a referendum approving an override. Given the nature of the revenue stream, these tax revenues are most frequently used to repay debt rather than being accumulated and utilized in a pay-as-you-go manner.

Recently, there has been a break in the tradition of local tax revenues being confined to use by community colleges having their own taxing authority. The City of Phoenix has successfully passed a tax referendum that will provide local tax support for the construction of a downtown campus for Arizona State University. As local governments increasingly recognize the value of institutions of higher education as "anchor tenants" in their downtown redevelopment efforts, there will likely be opportunities for such arrangements in other urban areas.

D. The Federal Government

In the 1960s, the federal government—through the Higher Education Facilities Act—was a major funder of academic facilities on college campuses. Those days are long since past. Now federal funds for capital projects are limited to facilities that are:

1. In direct support of a federal priority. This translates almost completely into support for the construction of special-purpose research facilities that will house activities of a very select nature (for example, research into different issues related to bio-terrorism).

2. Constructed as a result of Congressional earmarking. These appropriations can cover any type of facilities and are dependent solely on relationships with a Member in a position to "bring home the bacon" to an institution in his/her state or district. Since the level and nature of earmarking is causing considerable consternation in some quarters, this may be a funding mechanism that has reached its high-water mark.

E. Private Donors

For some public institutions—specifically those with large (and affluent) alumni bases and effective fund-raising offices—private donors have been, and will continue to be, important sources of financing for capital projects. Such support is typically found at major research universities; comprehensive universities and community colleges are much less likely to obtain major funding from such sources. Very few public institutions have an alumni base—and a history of success in tapping that alumni base for academic building support—to make this source a reliable one for most institutions. It takes a rare combination of a rich alum and common ground between donor and institutional need to bring such funding to fruition. Even when such funds are provided, they are much more likely to be focused on facilities normally not priorities of the state. Most donors would consider general academic buildings at public institutions to be a state responsibility.

Donors with the ability to provide substantial amounts of funds for capital projects will typically provide:

1. All the funding for a building, or

2. Funds that match those from another (type of) contributor—usually the state or federal government.

In almost all cases, they are interested in having naming rights for the building—they want either themselves or someone of their choosing to have their names inscribed in stone on the campus. This particular interest on the part of donors means that money from this source is rarely available for renewal and renovation projects; naming rights for existing buildings have long since been granted.

Accepting funds from private donors can create problems as well as benefits. It is not unheard of

for donors to provide funds for a building that is not a campus priority—or may not even be on the institution's radar screen. Institutions are hard-pressed to say "no" in such circumstances, but saying "yes" may cause friction within the institution and with the state over issues of funding the maintenance and operations of the building and the programs it is designed to house. Further, the gift may be for a priority project but come with complicating strings attached. A major gift for construction of a sports facility at the University of North Dakota came with the stipulation that the "Fighting Sioux" label on the sports teams be retained, a requirement that has put the University in a difficult position vis-à-vis the NCAA.

F. Institution's Own Funds

There are circumstances in which institutions can, and do, use undesignated general fund revenues to renovate or acquire academic buildings. This is particularly the case regarding renovation projects that are required but unfunded by other sources, specifically state governments. However, there are also instances in which campuses acquire new academic buildings using their own resources. Two instruments are favored under such circumstances:

1. Bonded indebtedness in which the "full faith and credit" of the institution lies behind the securities. This is little different from state bonds that must be repaid by institutions with the exception that there is less tacit understanding that state appropriations are made with repayment in mind. Another variation on this theme is the circumstance in which universities designate indirect cost reimbursement funds to pay off indebtedness on research facilities. Even in situations where this arrangement is utilized, special permissions may be requested from the state—or such arrangements may be included in the broader financing plan for major construction projects. This was the case for the financing of the new Health Science complex at the University of Colorado.

2. Lease-purchase arrangements in which the institution enters into a long-term lease arrangement with an owner with a provision that title transfers to the institution at some specified point in the future. This mechanism is easier to arrange for residential space since the owner can find an alternative use should the institution renege on its obligations. The more specialized the space, the more difficult it is to make a lease/purchase work—it is easier, for example, with general office space than with science laboratories.

Regardless of the instrument, these arrangements require a regulatory environment that allows institutions to engage in such practices. Such is not often the case; most states insist on prior approval that may or may not be granted under the premise that such actions are indirect means of obligating the state to future payments. The rules around this practice vary substantially from sate to state. They also require institutions to accept the responsibility of making the associated payments an annual budget priority—taking funds "off the top" of the annual budget—in the face of vagaries in funding streams for general institutional operations.

Perhaps the least constrained environment for use of institutional funds to repay borrowing for construction of academic buildings is in Arizona, where the state formulaically establishes a ceiling on borrowing and allows institutions to manage their own borrowing portfolios within the limits established.

MECHANISMS

In one way or another, all of the frequently used mechanisms were discussed in the prior section. This section serves to summarize the bits and pieces in a more orderly fashion. In reality there are only two generic mechanisms for supporting capital projects—outright purchase or acquisition through payments over time. The equivalent is paying cash or borrowing and repaying the loan.

The former is straightforward; the institution accumulates resources and pays for the capital project when the funds are accumulated. The funders who are in a position to support such an approach are state governments, the federal government, and private donors.

The case in which institutions essentially borrow funds and pay them off over time is only slightly more complicated. The basic instruments are either debt or lease/purchase arrangements.

There are numerous variations around the former:

- Whose obligation is it—the state or the institution?
- What is the nature of the collateral—full faith and credit or specific revenue streams (housing revenues, tuition, indirect cost recovery)?
- What is the recourse in case of default?
- What is the specific nature of the instrument—revenue bonds, tax anticipation notes, etc.?

While these are highly technical differences, the basics are fundamentally the same.

State practices vary enormously in this arena. Some states believe strongly in pay-as-you-go funding for capital construction and pay for most construction out of general fund appropriations for specific construction projects. Others rely heavily on state bond issues where the proceeds are utilized for campus construction projects and annual payments are made by the state. Massive bond issues in North Carolina and California are examples. Finally, there are states like Arizona that allow institutions to borrow (up to a limit) with repayment coming from the institutions' operating funds. Typically the state appropriations to institutions are structured with these repayment obligations in mind. The latter arrangement provides institutions with the most freedom; it also carries the most risk.

USES

As indicated in Table 1, there is but a limited number of different kinds of capital projects:

- Renewal and renovation projects
- New construction projects
  - Auxiliaries
  - General Academic
  - Research

The relationships between revenue sources and uses were noted in several instances in Section II but will be treated more systematically here.

A. Renewal and Renovation

In most states renewal and renovation projects take their place alongside new construction projects and get prioritized in competition with them. Projects dealing specifically with safety concerns frequently migrate to the top of the priority list while others slip to the bottom—a new building is much more attractive to funders than replacing steam lines or replacing the electrical system in Old Main.

The funders for such projects are predominantly the states, local taxing authorities (typically only for community colleges), and the institutions themselves, with the states being the primary source. They tend to use the same approaches—direct funding or debt—regardless of the type of project. One can make a very good case for shifting responsibility for renovation and renewal projects entirely to the institutions, leaving the state's capital projects appropriations to cover new construction projects. The rationale goes as follows:

1. The state (or some other funder) paid for the facility in the first instance; at that point it becomes the institution's responsibility. The state should not have to pay multiple times for the same facility.
2. Sound management practices would call for depreciation accounts (1½-2% of replacement value) that accumulate funds for renewal purposes. GASB accounting rules now require recognition of depreciation expense. Unfortunately such rules did not take effect until well into the useful lives of most buildings. The new rules help to avoid further accumulation of deferred maintenance liabilities. They do little to reduce the level of deferred maintenance that had occurred prior to the GASB reforms.
3. Use of set-aside funds puts establishment of priorities in the hands of the institutions where, many would argue, it rightfully belongs. Legislatures are not in a position to establish interinstitutional priorities for such projects.

4. Legislatures are much better equipped—and much more interested—in establishing priorities for new buildings.

The state of Missouri follows this policy (at least it did a few years ago). Under this policy the institution was obliged to spend the equivalent of the depreciation expense amount on renewal and renovation projects. The institutions selected the projects; their only obligation to the state was an accountability requirement indicating that the required funds had, indeed, been allocated to renewal projects.

In reality, institutions typically find ways to use their own funds only when needs become dire and funds are not forthcoming from the state (or any other source).

Sound practice with regard to funding renewal and renovation would have the following features:

- An explicit, system-wide determination of levels of deferred maintenance on each campus.

- A multi-year plan for the elimination (or significant reduction) of this backlog. This plan should be established as separate from financing for new facilities. The "cleanest" approach would be a state bond issue paid from general operating revenues and intended to remove R&R from the agenda as a state obligation.

- A requirement that an amount equal to GASB depreciation amounts be spent each year out of institutional operating funds on renewal and renovation projects. The institutions should make the selection of projects to be so funded. The accountability requirement should be that a) the institution has an annually updated list of R&R priorities, and b) funds in the amount of prior year's deprecation amount are expended on the highest priority items.

  Such a process, if implemented, would result in elimination of past accumulations of deferred maintenance and make the institutions, not the state, responsible for ensuring that deferrals do not accumulate in the future. Such a policy would also create disincentives for institutions to acquire additional facilities of marginal benefit or to hang onto facilities that might better be removed from the inventory. Finally, it would keep the focus of the capital process on new facilities—a focus consistent with legislators' interests and policy determinations and eliminate the confounding of policy decisions (new facilities) with ongoing operational decisions at the campus level. Kentucky would do well to consider such a policy.

B. New Construction Projects

1. Auxiliary Facilities

   Construction of auxiliary facilities—residential and dining facilities—is almost always funded by students through direct use charges (room and board fees). If such use charges are insufficient, institutional funds are tapped as a last resort to fill the gap.

   Construction of facilities such as student unions and recreation facilities are also typically paid for by students although the mechanism is almost always a broadly applied student fee rather than a use charge. For these types of facilities, private donors often contribute as part of a larger capital campaign. In some instances, states contribute directly to construction of such facilities.

   In virtually all projects supported by student charges or fees, the instrument used is some form of long-term debt.

2. General Academic Facilities

   The predominant funders of general academic facilities—classrooms, labs, offices, and libraries—are state and local governments and private donors. In rare instances students (through an imposed fee) and institutions themselves contribute. The federal government will participate only in the case of Congressional earmarks.

   The instruments most likely to be used by the state are direct appropriations for construction of the building or debt instruments that are repaid by the state either directly or indirectly through annual appropriations to the

institutions. Conceptually, the most satisfying approach is likely to be one similar to Arizona, where the state establishes a borrowing cap for each institution and empowers the institution to borrow in its own name. This avoids much of the competition for funds borrowed through a centralized state pool. A compromise is to establish borrowing limits for each institution but bundle the bond offerings each year as a way of securing better rates than can be negotiated by each institution acting independently.

Donor contributions most often come in the form of outright gifts.

3. Research Facilities

The primary funders of research facilities are state and federal governments and private donors (either individuals or philanthropic organizations). Funds from the latter two providers most frequently come in the form of lump-sum contributions. Funds from states follow the same pattern as funding for other academic facilities—in some states it is direct, pay-as-you-go appropriation. In other states, funds are provided through issuance and repayment of debt instruments. States fund research facilities in much the same way as they fund other academic facilities. Pay-as-you-go states maintain this practice for research facilities. States that borrow for general academic space also borrow for research facilities. To the extent that there are variations, they take the form of:

a. The state providing a challenge grant that leverages the capacity of the institution to generate funds from private sources.

b. Comprehensive financing plans for truly large undertakings such as the multi-billion dollar Health Services Campus at the University of Colorado.

SUMMARY

Reverting to Table 7.1 and filling in the blanks, primary funding patterns for higher education facilities are predominantly as indicated in Table 7.2.

While there are exceptions in almost all instances, the summary in Table 7.2 represents the weight of practice.

TABLE 7.2
Primary Funding Patterns for Higher Education Facilities

USES	SOURCES					
	Students	State	Local Govt.	Federal Govt.	Donors	Institutional Funds
Renewal and Renovation	—	Approp./debt	—	—	—	Approp./debt
New Construction						
• Auxiliary						
– Residential/dining	Use charges	—	—	—	—	—
– Recreation	Fees	Approp./debt	—	—	Gifts	—
• Academic facilities	Fees	Approp./debt	Debt	—	Gifts	Lease/purchase
• Research facilities	—	Approp./debt	—	Grants	Gifts	—

Table 7.3 below is presented as a worksheet for KCTCS.

Here, the subtotals of the "Strategic Funding" scenario suggested in Section 6.8 are shown in the "Amount Needed, from 2006 Study" column.

KPES and KCTCS policy makers can use Table 7.3 as a framework to allocate the Amounts Needed across the most likely sources of funds to create KCTCS' 15 Year Funding Plan.

If KCTCS chooses to supplement this study with additional information, any additional capital investments identified would need to be included.

TABLE 7.3
KCTCS Funding Patterns Worksheet for Higher Education Facilities

USES		SOURCES					
	Amount Needed, from 2006 Study	Students	State	Local Govt.	Federal Govt.	Donors	Institutional Funds
Renewal and Renovation							
• Condition/End of Life	$598m		Approp./debt				Approp./debt
• Space Adequacy	$43m		Approp./debt				Approp./debt
New Construction							
• Auxiliary	n/a						
2006 Capacity							
• Academic facilities	$438m	Fees	Approp./debt	Debt		Gifts	Lease/ purchase
• Research facilities	$0m		Approp./debt		Grants	Gifts	
2020 Capacity							
• Academic facilities	$718m	Fees	Approp./debt	Debt		Gifts	Lease/ purchase
• Research facilities	$0m		Approp./debt		Grants	Gifts	
• TOTAL	$1,797m						

Section 8: Recommended Next Steps

The VFA | Paulien | NCHEMS team recommends KPES and KCTCS work closely together to align each institution's capital needs with its strategic priorities for the coming 15 years. The following steps should be considered to help complete the picture that this study has started to paint, and well position the Commonwealth's public postsecondary education system as a national leader in stewardship of its facilities:

1. **Establish strategic goals for the 15-year capital plan**, possibly broken down into three 5-year periods. The strategic goals may go beyond those considered or recommended in this study, such as a new emphasis on building research capacity, a residential campus or other programmatic goals specific to the institutions.

2. **Complete the data** so that the 15-year plan includes ALL assets. There are various ways to establish or estimate the investments needed to address condition and space needs for the facilities not yet studied, including more facility condition assessments, further sampling and extrapolating condition or space results of similar buildings, or pure modeling based on age and use profiles of buildings yet to be studied.

3. **Integrate all capital planning data into central records** for each asset, and maintain those records to reflect recent changes (improvements or degradations). Records should be stored in capital planning and management software that makes strategic planning, spend management, and progress tracking easy.

4. **Fund according to needs –** as established in this and subsequent studies. "Needs based funding" can serve as a defensible, transparent way to allocate funds while addressing any past capital investment inequalities among the institutions, or on any particular campus. Funding allocated by percent of student population or annual increases to historical distributions tend to perpetuate past inefficiencies.

5. **Pool institutional capital needs** with similar needs from other Kentucky postsecondary education institutions, to facilitate better sources and financial terms for those funds. For example, to consider one possible funding source, the Legislature might fund (from appropriations or another source) all roof projects statewide in one budget cycle, or issue a bond for building new research facilities across multiple institutions.

It is the consultants' strong belief that the Kentucky Postsecondary System and Kentucky Community & Technical College System have already made a wise investment in their facilities through this study, which should serve as the basis for well-informed capital decisions that will help KCTCS and the Commonwealth achieve their 15 year goals.

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